2 P. C

Lecture 12th.

Lichen Pixidatus or Cup Moss grows upon all barren Rocks & Mountains in America & Europe. I have set it down on the Authority of Dr. Willis a Man of great Practical Knowledge but on Account of his exploded Theories left Read than he deserves. He recommends it in the Whooping or Chin Cough a Disease which he says the Physician seldom the old Woman often Succeeds in. The Remedy which they generally make Use of is the Cup Moss which is a simple Astringent without either Smell or Taste & on this Account we can make the Children more readily take a sufficient Quantity of it than of the Peruvian Bark which is recommended in this Case by Dr. Burton: Other Astringents have also been recommended. The Chin Cough was first probably imported from Asia & Africa as the Small Pox & Measles were. ~~from~~ Like these Disorders it attacks only those Children & Persons who never had it before It was not known in France before the Year 57/14. It cannot be owing to any Acrimony of the Humors as it then would have been known in Europe from the earliest Ages. The great Quantities of thick yellow Phlegm that are vomited & coughed up are to be

considered rather as the Consequence than as the Cause of the Disorder. Besides it is often Epidemical & manifestly Contagious It has this in common with some other Contagious Disorders, that a Person who has at any Time of his Life been afflicted with this Disorder need never dread a second Attack. Of the Truth of this I was assured by a Gentleman who in a Course of 32 Years extensive Practice never met with a Person who had had this Disorder twice. A common Catarrh has been often mistaken for a Chin Cough but may be distinguished from it by attending to the following History. The Chin Cough is sometimes attended with a Fever, sometimes not. It comes on gradually & is worse every other Day. It is at first dry but after 10 or 12 Days an Expectoration of yellow Phlegm ensues. After this the Disorder increases. In the Fit the Eyes seem in Tears Blood often gushes from the Nose. It continues until a vomiting arises. If the Fit should go off without this vomiting it will return with repeated Violence. If the Child is seized with a Fit of Coughing after Dinner it becomes black in the Face, falls to the Ground & is in Danger of immediate Suffocation unless a vomiting is excited by putting a Finger down its Throat ~~or otherwise~~ irritating the Uvula. A Child in this Disorder should never be left without an Attendant for when the Fit seizes it unless it can lay hold of a Table

or some Thing else to support itself it falls to the Ground and may receive considerable Injury & is also in Danger of Suffocation before Assistance can be had –

As the cause of this Disease is a contagious Miasma we have hitherto discovered Nothing by which we can prevent or cure the Disorder – all we can do is to palliate it & alleviate the Symptoms. When left to itself it will continue 11 or 12 Weeks & even sometimes six Months and in this Case the Child is generally thrown into other Disorders which prove fatal. Some are carried off by a Hectic Fever others by a Spitting & vomiting of Blood

This Disorder is manifestly of a Spasmodic & Convulsive Nature – If the Child is Plethoric or of a robust Habit of Body we may take away some Blood Emetics may be given on those Days on which they find themselves better – In the Beginning we may employ Musk, Camphor & other Antispasmodics – When the Inflamatory Symtoms are gone & the Disease become regular we may give the Bark, or if the Child will not take it a D. S. of Cuf. Moss or any other Vegetable Astringent. If this Method does not succeed a Change of Air may be necessary & it has happened that the Disease has been cured by changing the Air even for the worse –

All the unripe & naturally acerb Fruits

may be reckoned Astringents — the Virtues of all are nearly the same we may therefore consult Plenty & Cheapness

Prunus Sylvestris or Common Sloe, is perhaps equal to any other. The best Method of preparing it is by making a Rob like Elder Rob. In the Dysentery such Medicines may be employed with Advantage as are moderately Astringent & at the same Time correct Putrefaction. The Sloe proves highly serviceable in this Disorder — By its Astringency it restores Tone to the Intestines — it likewise corrects & obviates the Tendency to Putrefaction & as all acerb Fruits are not so liable to an active Fermentation as others they will prove less Laxative & the Sloe is on this Account very useful — An Infusion of the Leaves of the Sloe has been recommended as a Gargle in Spongy & relaxed Gums & to fix loose Teeth and also in Angina when it is owing to Relaxation —

Berberry is a very excellent Fruit of a grateful Astringent Taste — It may be given either in Juice Syrup or Jelly — It is particularly indicated in all Disorders owing to Putrid or Dissolved State of the Humors. Prosper Alpinus an Italian Physician famous for many Works particularly for one, De Præsagienda Vita Morte, was cured of a Malignant Fever attended with a Bilious Diarrhœa when his Life was despaired of by a plentiful Use of Barberry Syrup. Simon Pauli another Physician was cured of a similar Disease by the same Remedy. It

It is highly useful in all Fevers, in Dysenteries & in Cholera's attended with Symptoms of Putrifcency. Van Swieten from his own Experience recommends the inner Bark of the Tree as a powerful Hydragogue.

Succus Acacia & Hypocistis are Substances now scarcely known to many Physicians even by name. They are simple & pure Astringents & possess no Virtues to make them preferable to any others – as also the Gum kinds.

Terra Japonica. This is very improperly called an Earth. It is a Vegetable inspissated Juice prepared from the Juice of the Fruit of the Areka Palm Tree. It is prepared by boiling the Fruit in Water & adding some Lime to it which gives it the red Color. The Liquor is poured off & the Faces or those Parts which fall to the Bottom are dried & kept for Use. Its principal Use is in Laxity & Resolution of the Gums. It is chewed by the French Gentry to give them an agreeable Breath. It may be used in Diarrhaas & some Dysenteries. It is a powerful Astringent of no Smell & rather of an agreeable Taste. As to the Dose, it may be given in ℈ ß. to ℈ j. in Juby: or Solution.

Sanguis Draconis has at all Times been considered as a powerful Astringent & has been thought very serviceable in checking Haemorrhages, probably from its resembling Blood in Color. It is possessed of no Astringency & is totally insoluble in the Fluids of our System & therefore does not deserve to be considered as a Medicine. The only Use I know for it is to form Alum into Pills after the Manner of Flatuelties as I mentioned before.

Hypericum was formerly much esteemed in Medicine

and still continues in Repute with the Vulgar, but is now totally banished from our Prescriptions. From its Taste it appears to be an Astringent. It contains a large Quantity of fubtle essential Oil in little Cells like those in the Rind of Oranges &c. The Plant is said to be a powerful Diuretic. The Oil is said to have proved very useful in Epileptic Cases & in Mania, tho' I must confess I can not Account for its Operation in these Cases.

Lysimachia. Dr Haen assures us that he has written & himself have experienced the good Effects of this in the Dysentery in the Dose of ℥j. Morning & Evening. He says it cured a recent Dysentery in 3 Days & an old one in 3 Weeks. He used it principally in the Chronic Dysentery. With Regard to the Use of Astringents in Dysenteries Physicians are not agreed. This Difference of Opinion seems to have arisen from their confounding the Chronic and Acute Dysenteries which are very different Disorders. The Acute Dysentery is always attended with Fever the Chronic is not tho' sometimes there is a Symptomatic Fever but this is rarely the Case. The Acute generally lasts not longer than a Week or a Fortnight sometimes not so long. It is attended with great Pain and evident Signs of Putrescency in the Bowells. The Chronic lasts for many Months without much Pain or any evident Signs of Putrescency. The two Disorders are to be treated in a very different Manner. The Acute is to be considered as a Febris Introversa, as Sydenham terms it & is to be treated as a Putrid Malignant Fever by Antiseptics, diluent & acid Drinks, gentle Laxatives and Anodynes at Night. There is no Danger in giving Anodynes in this Disorder which greatly relieves the Pain & Tenesmus and cause a gentle Evacuation by the Skin which is of great

To

Service in this Disorder.

To increase its Diaphoretic Virtues we may combine it with Ipecac: or Tart: Emetic for we shall find hereafter that Emetics combined with Opiates are the most powerful Sudorifics. I have seen Dysenteries cured by no other Remedies than Opiates at Night & some Laxative in the Morning. In a Chronic Dysentery we should likewise endeavor to produce a Determination of the Fluids to the Surface, for without this all other Attempts will be vain. In this Anodynes are hurtful as they weaken & relax the Intestines already too much debilitated. Gentle Astringents combined with gentle Purgatives are very serviceable by restoring the Tone of the Intestines & evacuating the morbid Matter. Ipecacuanha alone in small Doses has been found of great Service. It has combined with its Emetic Qualities a manifest Astringency. In the Acute Dysentery Astringents are hurtful in the Chronic they are serviceable. In this Manner we may in some Measure reconcile the different & jarring Opinions of Physicians on this Head.

Plantago is a very weak Astringent. In Decoction the Plantane has been employed in Hemorrhages & Dr Clark formerly a Physician of great Eminence at Edinburgh asserts that he has seen Hemorrhages suppressed by this, which would not yeild to seemingly more powerful Remedies. An Infusion of the Leaves has been recommended in the Fluor Albus. Celsus recommends a Decoction of the Leaves for Consumptions & D. Thultz of Halle confirms this Opinion. Mr Boyle tells us that he has seen Consumptions cured by two Spoonsful of the expressed Juice of the Plantane taken every Morning for two Months. I know not to what Property to ascribe its Effects in this Case.

In this Country the Plantane is used for the Bite of the

Rattle Snake & other Serpents. With Regard to the Bites of Serpents, from all the Information I could get on this Subject, it appears that if the Bite is inflicted immediately into the Vein so that the Poison is conveyed immediately into the Blood, there are no Hopes of a Cure. But if it is inflicted into a Muscular Part, so that it must be taken up by the Absorbents before it can be mixed with the Blood there is no great Danger & warm Fomentations of all Kinds & even warm Water alone will answer equally well. Drinking Warm ~~Water~~ Liquors of all Kinds by keeping up a Perspiration will also prove serviceable. The Sentiments of Mr. Carver, who remained a long Time among the Indians, on this Head are very similar to those I have given. The Danger consists intirely in the Mixture of the Blood with the Venom. Poison of Serpents taken into the Stomach produces no Effects fatal. Mr. Pitcher tells us that a Number of Gentlemen had met to make some Experiments on the Venom of the Viper & had for this Purpose collected a Quantity of it in a Glass. To the Amazement of the Company one of them drank off the Poison but they were much more amazed when they found he experienced no Inconvenience from it. The People of Asia and Africa whenever they are bitten by a Serpent apply immediately to some one to suck the Wound & the Person who does this Office never feels any Inconvenience from it unless there is an Ulcer in the Mouth by which the Poison may be readily conveyed into the Blood. —

Polygonatum. The Flowers Leaves & Berries of this are of a very acrid & even poisonous Nature. The Root is remarkably mucilaginous with its Astringency. It has been used with Success in Hæmorrhoidal Swellings & Bleedings. The Dose is ℥ss. boiled in a Pint of Milk until Half is consumed & taken at once in the Evening. With Regard to the Use of Astringents in Hæmorrhoidal Cases when they are critical. They are undoubtedly improper. Some

Some have even supposed that the Hemorrhoids are a natural Evacuation answering the same End in Men as the Menses in Women This however is not the case for we see as many if not more Women afflicted with Hemorrhoidal Discharges as Men & some Women are troubled with the Piles during the Flow of the Menses. When they are Critical or have become Habitual to the System they are to be considered as a necessary Evil, but at their first Appearance they are certainly morbid. They are frequently occasioned by a Habit of Costiveness by which the free Return of the Blood to the Heart is prevented & is poured out into the Cellular Membrane & form Ecchymoses which are kept up by Laxity. Here, after we have removed the Costiveness Astringents will be very proper. When the Disorder has become habitual it will be dangerous to check it & therefore Astringents during or immediately before the Evacuation will be hurtful, but even here I can see no great Inconvenience from a moderate Use of Astringents after the Discharge has ceased, to prevent its Return

Semperviveum or Houseleek is a moderate Astringent combined with a mucilaginous Quality. Boerhaave says that ℥ß. of the expressed Juice & drank at once will frequently cure a Dysentery. Bayle recommends it mixed with Honey in the Aphtha in Children. It is said to be useful in Inflamation of the Mouth & Fauces. A Poultice of the Leaves is in great Repute with the Vulgar for Burns & Scalds The expressed Juice in the Philosophical Transactions of Breslau is recommended to take off Films of the Eyes. A Poultice of the Leaves is used for the Cure of Corns. A red Applications of

all Kinds to Corns are highly improper. We know Nothing that will effect a Cure but such Applications as by mollifying the Neighboring Parts will dispose the Corns to fall out.

Nettles when young are employed in Food. A strong Decoction of them is said to cure the Piles. The Infusion of the Leaves is employed in Consumption. The Juice has been recommended in Hæmaptoe. From their remarkable Property of exciting Inflamation & Burning in every Part upon which they are struck they have been employed in Torpor & Paralytic Affections of the Limbs. Here they act by exciting the Animal Fibre into Action & by producing a greater Derivation of Blood & Nervous Influence into the Part. This is termed Urtication. When we examine the Plant carefully we find that it is covered with little sharp Points which when struck against any Object, break & a Fluid is at the same Time poured out into the Wound, which produces the Inflamation.

Viscus Quercus or Mistletoe. Much Superstition has been mixed with the use of this Medicine. It has been thought a Specific in the Epilepsy. When Epilepsy proceeds from Relaxation allowing the Affection to recur upon slight occasions Cases Astringents are certainly useful. It has a Bitterness joined with its Astringency & may be serviceable where that is wanting. It is immaterial as to the Plant from which it is taken. This shows that Plants do not differ so much from the Juice they take in as from their different Assimilatory Organs. Its Virtues reside in the Bark. It is best employed in Substance in the Dose of ℈ss. vel ℈j.

Lecture 13th.

Uva Ursi a Species of Arbutus. This has of late been much recommended in Calculus Concretions & other Disorders of the Kidneys & Bladder. It was first recommended by Linnaus. After him several Trials were made by D. Haen in the public Hospital at Vienna an Account of which he has given in his Ratio Medendi to which I refer you. D. Haen found that it does not dissolve the Stone but mitigates the Pain arising from it, enables the Patient to retain his Urine and changes the bad State of this Fluid. Frequently when it was fetid, purulent, acrid & so highly alkalescent also change the Syrup of Violets Green & effervesce with Acids, by the Use of this Remedy it was brought back to its natural State & made to deposit a healthy Sediment. He says also that it cured all Suppurations of the Urinary Passages whether of the Kidneys Ureters Bladder Urethra Scrotum or Perinæum provided they were not Venereal, for in this Case Nothing but Mercury will succeed. It relieves the Pains attending the Stone, tho' it appears by sounding that the Stone is not changed either in Size or Shape. It is often serviceable where Lythotomy cannot be performed. D. Haen gives us the Case of a Gentleman 30 Years of Age afflicted with the Stone who was entirely relieved of all the Symptoms by the Use of this Remedy. He likewise gives us a Case where the Gentleman was cut but the Stone could not be extracted: By the Use of the Uva Ursi the Patients Life was rendered comfortable. The Method in which —

Dr Starr exhibited his Medicine you will see best from the following Case. A Lad about 11 Years of Age was brought into the Hospital at Vienna who for 4 Years had been afflicted with intense Pain in making Water & during that Time had voided two Stones each the Size of a Pea. Upon Sounding a Calculus was evidently felt. He was put upon the Use of the Uva Ursi of which he took 3ß. Morning and Evening & an Anodyne at Night. In four Days his Symptoms were greatly relieved & in a Month he was discharged quite free from Pain. He continued well for several Months last. neglecting the Use of his Medicine & using improper Diet, he had a Return of his Complaints & was brought to the Hospital a second Time. Here while every Thing was preparing for the Operation he took 3ß of the Tinct three Times a Day - In 3 Days the Pains were intirely gone. Upon sounding him the Calculus was evidently heard & felt. In a Fortnight he was again discharged. He returned into the Hospital a third Time & Recourse was again had to the Uva Ursi, but as his Pains were now more violent than they ever before had been, Linseed Oil was injected into his Bladder daily. After some Days when his Pains were abated the Injection of Oil was omitted & the Uva Ursi in Powder was given him daily.

The State of the Urine was always changed upon using the Uva Ursi. I am inclined to believe that the Symptoms attending the Stone are not owing to its Size, Shape, Weight &c. but depend intirely on the State of the Urine. We frequently find Persons afflicted with all the Symptoms of the Stone when no Calculus can be found in the Kidneys or Bladder & on the contrary we often upon Dissection find Calculi of considerable Magnitude in Persons, who during Life felt no Inconvenience.

If the Pains depended intirely upon the Stone why should there in the latter Case be no Inconvenience felt or whence in the former do the Pains arise. When the Urine is fetid, purulent, acrid & alkaline the Uva Ursi is often found very useful by bringing it back to its natural State. It acts probably by giving Tone to the Secretory Organ & enabling it to secrete a healthy Fluid. In all Ages have Astringents been recommended for the Cure of the Stone & it is probable that even Lime Water acts more by its Astringency than by any Power it has of dissolving the Stone. Lime Water frequently relieves the Symptoms without changing the Stone This appears evident in Mr. Walpole who published his own Case. He was intirely freed from Pain by the use of Lime Water. Upon Dissection after his Death a Calculus of considerable Magnitude was found in his Bladder. I am well aware that it is said that Lime Water communicates to the Urine of Persons who drink it a Power of dissolving Stones out of the Body. But the Urine of Calculus Patients will often do the same altho' they do not drink Lime Water & yet the Stone is not found dissolved & we are not rashly to conclude from Experiments made out of the Body that the same Effects will take Place within it.

From some Experiments lately made at Edinburgh it appears that when Uva Ursi was added to Urine in which was a Calculus, the Calculus was somewhat increased, but when the Acid of Vitriol was added it diminished.

I have seen the Uva Ursi tried in three Cases. The first was a Child afflicted with the Stone. The Uva Ursi was advised & was used without Success (The Stone was afterwards extracted by the Rotomy).

The second was a Gentleman 80 Years of Age who had been troubled with several Nephritic Paroxysms whether from a

Calculus was not certain. As he had no Desire to be convinced of such a disagreeable Truth, the only Method of ascertaining this, sounding, was not employed. He was advised to use the Aqua Vitæ in a strong Infusion. In 24 Hours after he began to use this Remedy his Pains were considerably abated & he was convinced that it was of great Service to him. It did not however intirely free him of his Complaints & he continued subject to repeated Attacks during the short Remainder of his Life.

The third Case was of a young Gentleman of 24 Years of Age who had been troubled with Nephritic Paroxysms. The Aqua Vitæ was employed but instead of mitigating it increased his Pains. Thus in two Cases out of three the Medicine proved quite ineffectual. Even Dr. Haen's Case is ambiguous for we find that the Disorder was always relieved soon after he came into the Hospital & returned soon after he left it. In the Hospital a very strict Regimen was no doubt observed & this might contribute as much to the Relief which was afforded as the Medicine —

Cortex Granatorum et Quercûs are strong & simple Astringents. As the Oak Bark is strong & easily procured we may use it in external Applications as in the Procidentia Ani in Children. We should always apply it cold for when used warm it will relax as much by its warmth on the one Hand as the Medicine will brace & astringe on the other — An Infusion of the Pomegranate Flowers gives an agreeable Gargle in Relaxation of the Uvula. —

Cortex Simarouba is the Bark of a Tree growing in Guiana where it is accounted a Specific for the Dysentery It was first brought from thence to Europe in 1713. It was employed in France in 1718 for the Dysentery which was then Epidemic

It excites a Vomiting Nausea & Diaphoresis Use of Ufe principally in Chronic Dysenteries. The Dose is ℥ ij boiled in a Pint of Water until 2/3 are evaporated - the Remainder is to be divided into 4 Doses one of which is to be taken every 3 or 4 Hours: ℈ ß of the Powder is also a Dose. It is possessed of no Astringency but its Virtues are intirely owing to its Sudorific Quality by which it restores the Determination of the Fluids to the Skin which we know to be of great Consequence in the Cure of Dysentery. I have used it several Times particularly in one Case at the Pennsylvania Hospital - A Man had been afflicted with a Dysentery several Months & Different Medicines had been prescribed by the different Physicians of that Institution to no Purpose. I at last prescribed the Simaruba & in 3 or 4 Weeks he was discharged perfectly cured.

Logwood is a weak Astringent insoluble in our Fluids either in Decoction or Extract. It is in every Instance inferior to other Astringents hence it is with Propriety rejected.

Galls are powerful Astringents. They give out their Astringency in Solution more than any other Astringents of the Vegetable Kind - They are proper in the Procidentia Ani in Children Fomented with Hog's Lard are useful in the Piles. In the Procidentia Ani we use the same Medicine to prevent its Return. I have seen Galls & Gentian effectual in curing Intermittents when the Bark had failed.

Fungus Militensis is a Substance not known in our Shops. Linnæus wrote a Thesis on it in which he recommends it in Hæmorrhages of all Kinds particularly those of the Uterus. It grows in the Island of Malta where a constant Guard is kept over it

lest some Person more attentive to his own than the publick Good should engross or destroy it. It was thought peculiar to this Island but it has been found in Jamaica & Dr Brown mentions it in his Natural History of that Island. It is recommended in all Kinds of Hæmorrhages from 3ss to 3ij in a Dose to be repeated at proper Intervals until the Effect is produced. —

I have now finished the Consideration of the Particular Astringents & shall in the next Place mention some general Terms comprehending those Substances, which tho' not really Astringent may occasionally prove so —

Acids. Applied to the Tongue they contract & corrugate the Parts & deprive the Lips of their red Color. The Vertues of Fossil Acids are similar & differ only in Degree of Concentration. There is a Difference between the Vegetable & Fossil Acids. The former are liable to ferment in the Primæ Viæ & to have their Acid Nature changed. The Fossil Acids being incapable of Fermentation & even resisting this Process are not liable to this Change. They also stimulate the Organs of Secretion by which they produce more copious Excretions. This the Vegetable Acids can not do unless they are given in very large Quantities — There is also a Difference between the Vegetable Acids. The Native have both the Vinous & Acetous to go through & are therefore more liable to be changed than the fermented. The Fossil Acids are very proper in Hæmorrhages especially when attended with Fever, where the Metallic Astringents from their Stimulus would prove hurtful, being possessed of a Sedative Vertue by which they diminish the Impetus of the Fluids & at the same Time contract the Solids: —

Austere —

Austere Wines act by their Acerbity. They are liable to the same Objections with the Native Vegetable Acids as they have generally undergone the Vinous Fermentation imperfectly & have still the Acetous to go through. By stewing them their Acerbity is increased & they are less liable to ferment. They are however rather to be considered as a convenient Vehicle for Astringent Medicines than acting as such. When a Choice of Wine is to be made the Austere are in some Cases to be preferred. Thus in the Dysentery where we want a weak antiseptic Fluid the red Wines are generally preferred with Propriety but they do not here act as Astringents for when given in large Quantity they commonly prove Laxative —

Bitters when Evacuations depend on Relaxation by giving a temporary Tone to the Parts may act as Astringents.

Sedatives may act as Astringents in stopping Evacuations by diminishing the Impetus of the Fluids and by taking off Spasm & Irritation when they are owing to these Causes.

Balsamics have been reckoned Astringents from their use in increased Discharges of the Urinary Passages as Gleets Gonorrhoeas etc. When given in large Doses they prove Laxative & when we come to consider this Class of Medicines more particularly we shall find that they cannot with the least Propriety be considered as Astringents. I conceive they act in stopping Gleets &c. much in the same Manner as Cantharides by exciting an Inflamation of the Urinary Passages to which they have a natural Tendency & thus producing a Constriction of the relaxed Glands &c

Exsiçants have been confounded with Astringents they are not however by any Means astringent. By this Term we mean such Substances as absorb Moisture. For this Purpose any dry insipid Powder may be employed. Powder of Chalk, Bole Clay are generally used - Oat Meal will perhaps answer better than any of them. Exsiccants may be employed when Perspiration is so increased as to become disagreeable. Here it would be improper even dangerous to check the Evacuation by Astringents but Exsiccants will remove the Disagreeableness without obstructing the Perspiration. They are also employed in Erysipelas an Affection of the Cute Mucosum. Here they do not act as Astringents by repelling but by absorbing the acrid Mucus which would otherwise cause the Disease to spread over the neighboring Parts. When this Disorder is confined to the Extremities there is not much Danger to be apprehended but when it attacks the Head Face or Breast it is often very dangerous. In it Repellents are not to be used lest they should throw the Disorder upon some of the Viscera & cause it to prove fatal. We may employ Exsiccants with Advantage to absorb any Moisture & Oatmeal is to be preferred as it is not so apt to harden & form Crusts as the Powders of Chalk &c. It should be employed upon Cloth.

We have now finished the Consideration of Astringents, and will in the next Place take a short View of what has been said on that Subject in the preceding Lectures.

We defined the Astringents to be such Substances as increased the Cohesion of the Fibres of our Bodies. We observed that their

principal Action was upon the Nervous System by which their Effects were much further extended & much sooner produced than could possibly happen from the circulation. We found that Astringents were indicated 1st in Laxity of the Solida Simplicia, if this may be called a Disease. This & Rigidity are generally Constitutional dout of the Reach of Medicines tho' Diet & Exercise have some Influence upon them. The greatest Stress was laid on Laxity & Rigidity when every Thing was attempted to be explained upon Mathematical Principles! Boerhaave improved the Theory & it continued a long Time in Vogue. The Nervous System which may be termed the Soul of the Machine was intirely neglected. Since we have begun to study the Laws of the Animal Oconomy with more Accuracy we find that Laxity & Rigidity are of very little Consequence and may be intirely neglected. The only Morbid Cases which occur to me at present are 1st from the too long continued Application of Emollients to any Part. 2dly in the Rickets where even tho the Bones are found softened. 3dly where the Parts have been overstretched & the Tone destroyed. This is illustrated in Catgut & other elastic Substances which being extended beyond their Elasticity will not contract to their former Length when let go —

2dly in Debility of the Solida Viva. This often occurs & may be brought on as well in a Moment as in a Month or even a Year.

3dly In increased Action of the Solids when owing to Irritability or Mobility of the System —

4thly In increased Evacuations of Blood. The Causes of these may be referred under these Heads —

1st

1st Debility & Relaxation – 2d. Debility & Irritability &
3d. Increased action of the Heart & Arteries. In the former
Cases Astringents are proper, in the last hurtful. We should always
employ the least Stimulating Astringents in Hæmorrhages as
Alum in Substance or Alum Whey which will often prove
effectual when no other Remedy will. When we use Astringents
to check Hæmorrhages that are dangerous we should employ
the strong & febile ones. When to prevent their Return the weak
Vegetable are most proper in small Doses so as to bring on a
gradual Constriction –

5thly. In Ulcers to bring on that Degree of Inflamation
which is necessary to the Formation of good Pus. From their
Virtues in healing Wounds they were termed Vulneraries by the
Antients as they thought them possessed of a Specific Property –

6thly. In Inflamation. This is often produced by Debility as
well as Strength of the Vessels. In the former Case the Vessels do not
propell the Blood with sufficient Vigor it therefore stagnates
and produces Inflamation. In the Latter Case the Blood is forced
into Vessels not naturally accomodated to receive it. Inflama-
tions produced in these two different Methods are to be treated in
very opposite Manners – For Instance in Inflamations of the
Eyes are to be treated in a very different Manner in the young
and vigorous from those in the old & debilitated. In the Latter As-
tringents are very proper in the Latter hurtful. An Inflama-
tion in the young & vigorous tends to Suppuration in the old
to Gangrene. This gives us a Reason why the Peripneumony
is generally fatal in old People & requires different Treatment
from that in young People.

As the stopping of Hæmorrhages bears so considerable a Share
in the Life of a Surgeon we shall in our next Letters treat of Hæmorrhages –

Lecture 14th.

Of Hæmorrhages.

By the Term Hæmorrhage we mean an Evacuation of pure Blood from the Vessels of a living Body. D^r Stahl & his Followers whom I formerly mentioned as the best Writers on this Subject have very properly divided Hæmorrhages into Active & Passive.

The Passive are allways owing to some external cause producing a Rupture or Laceration of the Vessels & more properly come under the Notice of Surgery.

The Active are produced without any external cause solely from increased Action of the Vessels. This increased Action is owing to some internal Cause.

The Active are divided into Ordinary & Extraordinary. The Ordinary are when Blood flows from a Part usually subject to Hæmorrhages as the Nose Lungs Uterus etc^a

The Extraordinary when Blood flows from Parts out of which it does not usually issue, as the internal Angle of the Eye Tip of the Finger, Ears &c.

The Active are also divided into Natural & Preternatural The Active Ordinary Natural occur only in Females & are absolutely necessary to their enjoying a sound State of Health. These are the Menses & Lochia which are never called Hæmorrhages unless they are immoderate -

The Active Ordinary Preternatural are always Morbid Affections & deserve accurate Attention.

Hæmorrhages acquire different Names according to the Part from which they issue. Thus it is called Hæmoptoe

when it issues from the Lungs; Vomitus Cruentus or Hæmatemesis from the Stomach; Hæmorrhois from the Vessels of that Name; Mictus Cruentis or Hæmaturia from the Urinary Passages and Menorrhagia Gravidarum when from the Uterus during Pregnancy.

Persons of a Sanguineous Temperament which is known by a florid Countenance smooth Skin, shining Redness of the Lips & Corners of the Eyes & pale Hair generally inclining to red are very subject to Hæmorrhages especially from the Lungs Hence they frequently die Consumptive.

Persons also of a Sanguineous Melancholic Temperament which is known by a Paleness of the Countenance, Fulness or Distension of the Veins on the Surface of the Body & Hair inclining to Black are also subject to Hæmorrhages.

Persons also who live a very Indolent Life, above Stairs, are frequently troubled with them.

Such Persons also as are troubled with watery Elevations of the Head when young are often veiged with Hæmorrhages when old.

Particular Seasons contribute to Hæmorrhages, thus they are most frequent about the Vernal & Autumnal Equinoxes. Hæmorrhages happen at every Period of Life. This is an Observation as old as Hippocrates himself. Celsus & many others confirm it. They flow however from different Parts according to the Time of Life & even the Sexes make some Difference here. Thus Boys are more subject than Girls to Hæmorrhages of the Nose which seldom appear before the 12th or after the 18th Year. Hæmatoises more frequently attacks Men than Women. It generally appears from the 18th to 35th Year

and a Person who has passed that Period without being attacked with a Spitting of Blood or any Symptoms of Consumption may be thought safe from these Disorders. It is true a Spitting of Blood & Consumption do sometimes make their first Appearance after this Period but then it is owing to some extraordinary Circumstance.

Hæmatemesis or Vomiting of Blood more frequently occurs in Women & it sometimes arises from a Suppression of the Menses. This however is not always the case for it sometimes appears when there is no Obstruction even during the Flow of the Menses. Pregnant Women are sometimes seized with a Vomiting of Blood.

The Hæmorrhoids or Piles seldom appear before the first Vigor of the Body is gone off: They in general make their first appearance not till after the 36th Year. As a Melancholic Temperament conduces to Hæmorrhages & frequently brings on the Piles, Men in general being of a more serious Turn of Mind than Women are more subject to this Evacuation. Women are sometimes troubled with the Piles during Pregnancy. This is owing to the gravid Uterus compressing the Abdominal Veins & preventing the full Return of the Blood to the Heart thro them.

Of all the Active Hæmorrhages the Mictus Cruentus is the least frequent. It never attacks Women & seldom Men before their Grand Climacteric or the 60th. Year. When it is owing to external Violence or Calculi in the Urinary Passages it is to be considered as a Passive Hæmorrhage. Women are sometimes during Pregnancy subject to an Hæmorrhage from the Uterus. This is called Menorrhagia Gravidarum which we shall consider more particularly hereafter.

A Hæmorrhage sometimes comes on suddenly, but in general is preceded by the following Symptoms.

There is a Sense of Fulness & Tension sometimes of Pain in the Part from which the Hæmorrhage is to issue, a Diminution of the natural Secretions, hence Costiveness, pale limpid Urine a dry Skin with evident Signs of diminished Perspiration & if the Person has any Ulcers they become pallid & discharge little or no Pus; a Lassitude & Aversion from Motion; Coldness of the Extremities, Wind & Borborigmi in the Intestines; frightful Dreams during Sleep, Anxiety; a Sense of Chilliness or what is called Horripilatio; Pains in the Back & Loins & a Dimness of Sight. The Countenance becomes pale; there is an Increase of Thirst & Heat & a quick strong Pulse. The Tension is increased until the Hæmorrhage breaks forth. Upon the Cessation of the Hæmorrhage all the Symptoms remit. Hæmorrhages frequently become Periodical & return sometimes after an Interval of a Day, sometimes of a Month & sometimes of a Year & there are Instances of their returning at a longer Period.

The Predisposing Causes of Hæmorrhages are various. As Hæmorrhages come on sometimes suddenly & are sometimes preceded by the Symptoms above enumerated we may in general the Antecedent Causes to two Heads—

1st Such Things as suddenly increase the Circulation, as violent bodily Exercise, strong Impressions upon the Mind or upon the Organs of Sense immediately communicating with the Sensorium Commune, as great Light great Noise, violent Passions of the Mind as Anger— external Heat, the hot Fit of a Fever— All these have been known to bring on an Hæmorrhage

2dly A Topical Plethora. That this precedes almost every Hamorrhage is evident from the Tension & Fullness. It is owing to a longestion of the Vessels - This Congestion may be brought on by a general Plethora of the System. The Causes of general Plethora may be referred to three Heads -

1st. It is owing to an Increase of Nourishment the Evacuations continuing the same. In this Case the Equilibrium that ought to be kept up between what is taken in & what is discharged from the Body is destroyed. To this Head we may refer a large Quantity of Animal Food especially if accompanied with an indolent Life -

2dly Plethora is produced by a Diminution of the Excretions while the Nourishment continues the same. Under the former Head the Quantity here the Quality is rather to be considered. This Animal Food being less Perspirable will be more apt to produce Plethora than the same Quantity of Vegetable Food and Oysters & Fish of all Kinds being least alkescent & least Perspirable will most readily occasion it. The Flesh of young Animals also will be more likely to produce Plethora than that of the full grown. A Want of Exercise may likewise be referred under this Head, for without this the Fluids are not driven on with sufficient Strength & hence Congestions are formed in the Vessels & Perspiration is checked. The Moisture of the Atmosphere checking Perspiration may likewise be considered as a cause under this Head.

3dly A Suppression of usual Evacuations. To this may be referred an advanced Period of Life, for thus in Women we find the Menses are suppressed & in Men the Evacuation by the Skin.

A Plethora is often produced by a Diminution of the Body as the Loss of a Limb for in this Case the Blood which was formerly carried into that Part is carried into others Hence we find Hæmorrhages frequently happen after the Loss of a Limb.

A Partial Plethora may be produced independant of a general Plethora from an increased Distribution of the Fluids to a particular Part. This may be owing to various Causes. —

1st. It may depend on the Growth of the Body. Thus in young Persons before Puberty we observe Hæmorrhages most frequently from the Nose, arising from the Head ceasing to grow while the same Quantity of Blood is still derived into it. When they approach to their Acme, as the Vessels give more Resistance to the Blood a greater Quantity will be carried to the Lungs which will be least able to make a Resistance Hence Hæmoptoe is most common at this Period. In young the Arterious in old the Venous Plethora takes Place. This arises from the different Strength of the Vessels at different Periods of Life. Dr Hewtringham has observed that in young Animals the Arteries are weak & lax but when the Animal grows older they become more rigid & are endued with greater Strength Hence propell the Fluids into the Veins — Hence it is that old People are more subject to the Piles. In old People the Discharge by the Skin is in a Manner totally supplyed & the Fluids are carried in greater Quantities to the Kidneys, hence the Discharge by Urine is increased in Old People & they are frequently affected with a Hæmaturia.

2dly The Situation & Conformation of the Body may occasion an increased Distribution of the Fluids to a particular Part. Thus a wrong Conformation of the Thorax which is known by high Shoulders, along thin Neck, flat & narrow Chest is often attended with Congestions in the Lungs & hence Hæmoptoe is

is frequently found in Persons of this Shape where the Lungs are not so large as they ought to be & as the same Quantity of Fluids is carried thro' them in a given Time Congestions will be readily formed. A Sedentary Life has been known to bring on the Piles. Here the circulation thro' the Veins of the Abdomen is not carried on with sufficient Strength hence Congestions are formed about the Anus. A Debility of a particular Part will tend very much to produce Congestions in that Part & consequently Hæmorrhages. For as the Vessels are weak and lax they will not be able to resist the Impulses of the Fluids & a greater Quantity will be carried into that Part. Hoffman very properly reckons an Atonia of the Rectum among the Occasional Causes of the Piles.

3dly Local & partial Stimuli derive a greater Quantity of Fluids into the Part to which they are applied than it naturally receives. Under this Head Calculi in the Urinary Passages may be reckoned. These we have already said sometimes produce Hæmaturia by lacerating the Vessels but they also produce this Discharge by deriving a greater Quantity of Fluids into these Parts. It is of some Use to distinguish between these two Cases which may be done by attending to the Symptoms preceding the Hæmaturia in the latter Case. Hardened Fæces collected in the Rectum acting as a Stimulus often produce the Piles. Hæmorrhages of the Uterus are sometimes occasioned by Part of the Placenta remaining & acting as a Stimulus after Birth.

4thly. Substances taken into the Body which have a particular Tendency to any Part or the Viscera will produce a Congestion in that Part & consequently an Hæmorrhage. Thus Aloetics frequently produce the Piles. Strong acrid Diuretics as Turpentine Cantharides often bring on bloody Urine &c

Discharge of Blood from the Uterus during Pregnancy & consequence Abortion. This they do merely from their Irritation in the Urinary Passages being communicated to the neighboring Uterus & not from any Specific as is commonly supposed. Emetics will often produce Vomitings of Blood when strong dosed frequently—

5 thly. An increased Action of any particular Part will produce a greater Determination of Blood to that Part. Thus we find that Hæmoptoe is frequently produced after a violent Exertion of the Lungs as Declaiming, Singing &c. Women who copulate too freely with Men are often afflicted with Hæmaturia.

6ly Suppressions of usual Evacuations will produce a greater Determination to particular Parts hence Hæmorrhages are frequently produced by checking the Perspiration and by Astringent Applications & by stopping Issues. It has been commonly said that the Hæmorrhage in this Case was owing to the Fluid which was formerly evacuated by the Issue for Instance being carried to some other Part & producing a Congestion there, but we often find that the Quantity of Matter discharged by an Issue in 24 hours is so small that it can have little Effect in this Way. We must therefore account for it from the Equilibrium which is so necessary to our Body being disturbed by the Suppression of the Evacuation—

7 thly. Whatever prevents the free Return of the Blood thro' the Veins to the Heart may cause Congestion by increasing a Determination of the Fluids to some particular Part. Thus hardened Faces in the Rectum compressing the Veins often produce Piles. In this Way we can account for Hæmorrhages arising in different Parts from Scirrhus Spleen or Liver.

8 thly

8thly Infarctions of the Viscera by preventing the same Quantity of the Fluids from being carried to the Parts appointed as naturally is carried thither will occasion Regurgitation, the Equilibrium in the Distribution of the Fluids will be destroyed Hence an increased Distribution to some particular Part will be occasioned_

9thly & Lastly. Spasmodic Constriction of any Part particularly of the Extremities will often ~~increase of the~~ produce an increased Determination of the Fluids to a particular Part Whatever therefore excites Spasm may occasion Hæmorrhages as Cold & Moisture of the Atmosphere, Distressing Sensations of the Mind which we know excites Spasms as Sorrow &c. often occasion the Piles.

Habit has a great Share in continuing Hæmorrhages. How this happens is to us a Mystery but we know that Habit has a great Influence upon many Disorders as well as this.

We now come to the Proximate cause of Hæmorrhages. They are produced by Ruptures of the the Vessels or their Anastomoses. These Ruptures may be occasioned

1st By an increased Circulation_
2dly By Topical Plethora.

How a Topical Plethora can produce the Symptoms preceding Hæmorrhage it is difficult to determine All that I can advance upon this Subject is but Conjecture. It is of no great Consequence whether it is true or false as it does not interfere with Facts it will at least serve to show that when Physicians agree in Facts their Speculations are at least harmless. The finer a Web is spun the

more easily it is broken & this is to be said in favor of subtle Theories that many do not understand them. When Nature perceives any Part to be oppressed with an over Proportion of Fluids she will endeavor to remedy this & to remove it, if she fails in her Attempt the Hæmorrhage will certainly ensue.

We are now to say a few Words on the Cure of Hæmorrhages.

Independent of the Cause the Cure of Hæmorrhage turns upon three Points or Indications

1st. To diminish the Action of the Heart & Arteries & to divert the Blood from the Part. The first Part of the Indication is to be answered by the Antiphlogistic Method which consists in Bleeding, gentle Laxatives, cooling Drinks, a thin Spare Diet, cold Air & Absence from Light & Noise & from every Thing which excites the Mind into Action.

For diverting the Blood from the Part we make Use of Diaphoretics combined with Opium, Draughts of cold Water or Water impregnated with Acids, Clysters of pure cold Water, Blisters, Cupping, Milk warm Pediluvia will all tend to divert the Blood from the Part

2dly To give Constriction to the ruptured Vessels &

3dly To prevent the Return of the Hæmorrhage.

For both these Purposes Astringents are commonly employed. These as were said before are either Fossile or Vegitable. As the Fossil are more sudden & stronger in

their Operation they are chiefly to be relied upon in any Emergency. Those more commonly used are the Preparations of Iron Lead & Alum. Alum They D.r Whyte found would stop Hamorrhages of the Uterus when they would yield to no other Remedy. When an Hamorrhage is owing to an increased Action of Heart & Arteries Astringents should not be employed until their Action is diminished. When it is owing to Relaxation & Irritation Astringents are properly employed. When it is owing to Irritation or Irritability we should combine Opium with our Astringents Cold may act as an Astringent in topical Applications Thus Cloths dipped in Cold Water or Vinegar & applied to the Head or private Parts will often stop an Hamorrhage of the Nose. Astringents are also serviceable in external applications. Thus an Infusion of Oak or Peruvian Bark is employed with Advantage to stop an immoderate Discharge of the Piles.

To prevent the Return of Hamorrhages the Patients should take Care to avoid the Occasional Causes. Bleeding has been recommended but it should always be in small Quantities. Topical Bleeding may be very serviceable. To prevent the Return we should always use the weaker Vegitable Astringents in small Doses.

Emollients come next in Order which we shall treat of Gentlemen at our next Lecture—

Lecture 15th.

Emollients.

These are such Substances as relax the Rigidity of the Solids, diminish their Cohesion & introduce a larger Quantity of Fluid or Moisture - Hence they are indicated in Leanness, Dryness & Contraction & other Cases of this Kind & in Rigidity either of the Solids Simplicia or Viva: all Substances containing Oil Water or Mucelage are Emollient, & it is not of much Consequence which we employ. Warm Water will answer every Indication of Emollients. We are therefore to treat of the Hot Bath.

The Effects of this are not simply Emollient - it is also Antispasmodic. We shall consider its Effects in each of these Ways.

The Use of the Warm Bath was introduced in the earliest Period in Warm Countries where it is not only agreeable but necessary. In Greece & Rome it was so much employed as to become one of the most fashionable & expensive Articles of Luxury. There Physicians employed for the Preservation from Cure of many Diseases. In the Warmer Climates where it is so necessary that the Perspiration should be kept up the daily Use of it is attended with considerable Advantage - Whether it will be productive of equally good Effects in the colder Countries is doubtful - It will perhaps not answer so well as in the warmer Climates; but in these there is no Doubt but it may be employed with considerable Advantage as a Medicine

We are first to consider its Effects & Manner of Operation & thereby to infer its Utility in Diseases.

By the Hot Bath or Balneum Lallidum Physicians generally mean a total Submersion of the Body in warm Water. We are not to consider it in this limitted Sense but are to extend it to the external Application of warm Water to the Body in whatever Manner by Submersion, Affusion, Pedelavia, Fomentation, Vapour or Steams applied to the Body.

Baths may be made of two different kinds of Water. viz: Simple or Impregnated & their Effects have been considered as different. We shall first treat of the Effect of Simple Water, by which you will be able to understand those of the Impregnated & indeed the Effect of these differ very little from those of the Simple and we find that in those Cases where Impregnated Waters have been particularly recommended Simple Water will answer equally well provided there is the same Heat.

The Effects of the Hot Bath depend upon Heat & Moisture as these are either applied.

We shall first consider the Effects of these separately.

Water applied to the Skin dissolves the Mucus with which that Part is naturally supplied washes off all Uncleanness adhering to it. It opens & dilates the Pores increases the Perspiration hence prevents all Disorders arising from that obstructed. It takes off the Acrimony from

A.E.

the Skin which is often the Cause of Disease. These Effects may be produced by Water independant of Heat but it is evident they must be more considerable from warm Water than cold. The Effects however are not confined to the Surface of the Body. It penetrates the Scarf Skin or Cuticle & relaxes the Nerves or Nervous Expansion under it & by Sympathy these Effects are extended over the whole Body. It has been supposed to penetrate even the Skin & Muscles & relax the Ligaments of the Articulations, but we can perceive no Pores by which it can penetrate the Skin & even Suppose it could pass this it is not probable it would penetrate the Cellular Membrane extended under this almost over the whole Body & replete with Fat. We can perceive no Effects on the Skin but the Effects of Inhalents. It may be taken up by the Inhalents & carried into the System & may there exert its relaxing Qualities, but we See that these Effects are produced in a very different Manner from what is Supposed. By passing the Lymphatics it dilutes the Fluids washes away Acrimony in Lymphatic Glands & prevents Obstructions from being formed in those Parts. That the Water is taken up by the Lymphatics is proved by a Cure related by D.r Simson P. M. in the Univers.: of St Andrews in Scotland. A young Man in a Fever & Sore Mouth with a Diarrhea would not or could not drink tho' laboring under great Thirst. A warm Peruvian was ordered his Thirst was removed & short Time after he had taken his Feet out of the Water he

and a liquid Stool a little more colored than the Opake in the Bath. The Effects of Heat upon the Body are very considerable. These Effects are proportioned to the Degrees of Heat employed. The common Degrees of Baths are from 80 to 112 of Farenheits Therm: If the Heat is below 80° no considerable Effects can be produced - if above 112° it cannot be continued any length of Time without occasioning Pain. Heat rarefies, dexpands the Fluids & mollifies the Solids. When a Degree of Heat greater than that of the Atmosphere but less than that of our Body is applied to it, it produces an agreeable Sensation, it relaxes the Cuticle & Nerves expand under it: it increases their Sensibility & by Sympathy with these its Effects are extended over the whole System. But if a Degree of Heat greater than that of our Body or even less if it is continued a considerable Time proves a powerful Stimulus.

Some Animals become Torpid & in a manner dead when the Temperature of the Air is not above a certain Degree & they may be recovered by applying a greater Degree of Heat. We may from this & many other Circumstances infer that the Mobility of the Nervous Power depends in a great Measure upon Heat & that Heat is the principal Stimulus to the Animal Body. After a Person has remained some Time in the Hot Bath we find the Veins upon the Surface become turnid - This is owing to the Heat expanding the Fluids & relaxing

the Solids. It is also owing to the Stimulant Effects determining a greater Quantity of Fluids into the Skin.

We are now to speak of the Diseases in which the Hot Bath is useful.

First by detergeing & preventing Sordes by washing away Acrimony & relaxeing the Skin it takes off Obstructions & prevents Congestions from being formed there. Hence it is serviceable in all Disorders of the Skin

2dly As it increases the insensible Perspiration it will prevent tremore Diseases arising from obstructed Perspiration. I have repeatedly mentioned that Diarrhoas & Dysenteries, Vomiting Colics &c. are frequently if not always owing to this Cause. It is of great Service in these Disorders. Many Disorders tho' not owing to obstructed Perspiration are kept up by it. Here it will prove serviceable in by keeping up & promoting this Discharge. It is on this Principle that it proves useful in Disorders arising from a vitiated State of the Humors as the Scurvy it is probable might be prevented by the daily Use of Warm Bath. Many Disorders which are owing to foreign Matters taken into the System which are again to be expelled by some Excretion the Warm Bath by keeping up the Perspiration will carry off these Miasmata - hence it is serviceable in all Contagious Disorders as Syphilis or Lues Venerea. This Disorder altho' it is not cured by the Warm Bath alone

is much more readily cured by other Remedies when the Warm Bath is daily employed hence it is very easily cured in warm Climates & succeed the best in the warm Seasons.

Altho' the Warm Bath produces these good Effects yet it is attended with this Disadvantage that it renders the Body more Susceptible of Colds & the Disorders arising from it - since the daily use of it is much more proper in Warm climates & even there it is dangerous to expose the Body to the Air immediately after bathing. Galen who practised in a warm Country that after bathing Cold is to be carefully avoided -

3dly The Warm Bath takes off all Obstructions in the Skin & Cuticle & is therefore useful in Phlegmons & all kinds of Inflamation if we except one Species the Erysipelas which is attended with an Exudation of acrid Mucus by which it is extended. This is to be treated with rather dry than moist Applications as when treating of Desiccants we mentioned.

4thly By increasing the Circulation of the Blood and the Influx of the Nervous Power it proves serviceable in Atrophy or Marasmus. On these Accounts also it may be useful in partial Palsies or even in a Hemiplegia when not owing to Congestion in the Brain.

5thly From its Stimulant Effects & increasing the Circulation it proves hurtful in the deep seated Inflammations & hence we see why warm Fomentations so often

increase the Rheumatism. As they extend its Effects over the whole System the Warm Bath often proves serviceable in rigid Tendons & Ligaments & in Contortions. Here it acts by its relaxing Qualities. It often proves highly useful in Contractions of the Fingers & Toes by promoting the influx of the Nervous Power into the extensor Muscles & enabling them to overcome the rigid Flexors. From promoting the Influx of the Nervous Power the Warm Bath is often useful in Chronic Rheumatism which is frequently owing to a Debility in the Muscles of the Part affected.

6thly. I mentioned formerly that the Consent of the Stomach was greater with no Part of the Body than with the Surface. The Warm Bath therefore frequently takes off Spasmodic Constriction of the Abdomen, particularly the Colic. In this Disorder when all other Remedies fail the Warm Bath proves the first of Medicines & will give Relief if this is to be procured by Medicine.

7thly. As there is a considerable Consent between the Skin & Kidneys the Warm Bath proves serviceable in Spasms of these Organs. Oftentimes a Stone is retained in the Ureters by Means of Spasm & causing great Pain then the Spasm is increased. The Warm Bath by taking off this Spasm promotes the Expulsion of the Stone into the Bladder & thus removes the Pain. From its Antispasmodic Virtues the Warm Bath proves a most efficacious Remedy in the Hysteric Hypochondriac Diseases. These are generally attended with Spasms in the Alimentary Canal for which we have found the Warm Bath to be very serviceable. It indeed mitigates Spasm in every Part

Athly. Its Effects are not confined to the Muscular Parts of our Bodies - they are extended also to the Vascular System. It is used in Fevers. We shall next treat of its Utility in these Cases.

It was much employed by the Antients for the Cure of Fevers Among the Moderns Dr Gilchrist strongly recommends & gives a Number of Cases annexed to a Treatise on the Use of Sea Voyages in Consumptions in which it was employed with surprizing advantage. It proves powerfully Emollient & highly Antispasmodic - It increases the insensible Perspiration - it takes off Spasm, renders the Circulation equable & causes a Derivation of Fluids from the Head - Causes Drowsiness & disposes to Sleep. Part of the Water being taken up by the Absorbents it will act both as a Diluent & Attenuant. Pediluvia prove very serviceable when in Fevers there is a Topical Affection of the Brain with Delirium & Subsultus Tendinum. They also prove very serviceable when there is a Coldness of the Feet. This they relieve by increasing the Circulation, determining a greater Quantity of Blood into them & keeping up the Perspiration. In Fevers Persons sometimes void large Quantities of pale limpid Urine. This is generally a Sign of approaching Delirium This Symptom may be relieved & the Delirium prevented by bathing the Feet in Warm Water. In this Case it has been common to cut up Animals alive & apply them to the Soals of the Feet. They act upon the same Principles as Warm Water & we ought always to give it the Preference as it can be more readily procured and its Effects are more certain. This Practice also favors of Cruelty, will be disagreable to most Patients &

therfore ought deservedly to be rejected. The Hot Bath is not to be used indiscriminately in all Kinds of Fevers. It is hurtful in all Inflamatory Fevers & Fevers attended with topical Inflamation as it proves a Stimulus under certain Circumstances. The Warm Bath is principally useful in Fevers that are owing to or attended with Debility. It is particularly useful in Nervous Fevers & such as are attended with a universal Spasm. It is principally useful in Nervous Fevers where we want a moderate Stimulus combined with an Antispasmodic. After Child-bearing Women are often exceedingly restless & can get no Sleep. In this Case Opium is generally given but we cannot in general employ a better Remedy but in some Cases Opium increases instead of relieving it & here the Warm Bath generally succeeds. The Difficulty of applying the Warm Bath is a great Obstacle to its use. It is generally applied to the lower Extremities & with Propriety both for Convenience & Advantage for the Spasm is generally stronger in the Feet as they are the most remote from the Heart. It may also be applied with more Safety to the Feet than to any other Part. We oftentimes cannot employ Pediluvia as our Patients cannot be moved. In this Case we must use Fomentation. The Method which I generally advise is as follows. All the bed Linnen being removed the Patient is to be laid upon a Blanket and to be covered with one two or more according to the Temperature of the Weather. Two small Blankets are to be at Hand. A Blanket is wrapped close round the Waist of the Patient to confine the Heat, one of the small ones is to be dipped in Water & with it the Patients Feet Legs & Thighs are to be fomented; when this becomes cold the

the other small Blanket it to be applied in the same Manner and in this Way we may continue the Fomentation for Half an Hour, an Hour or even longer without fatiguing the Patient.

As Warm Pediluvia cause a Derivation from the Head they are employed the Face from the Small Pox. Care should be taken not to let our Patient sit too long in the Water least by its Stimulus it should raise the Pulse & quicken the Circulation & thus prove the Means of producing a more plentiful Eruption. The Patient should also avoid keeping his Face over the Bucket or other Vessel in which the Water is contained least the Vapor from the Water should relax that Part & produce a more plentiful Eruption there than would otherwise have happened. By relaxing & taking off the Rigidity & Tension of the Part to which it is applied the Warm Bath will communicate its Effects to those Parts with which it sympathizes. Hence warm Pediluvia appear to be proper in Cases of obstructed Menses & we find that they are employed with Success in this Case likewise to bring on a Discharge of Piles when they are suppressed. As the Warm Bath by its Stimulus determines a greater Quantity of Blood into the Part to which it is applied it will take it off from the other Parts. When there is too great a Determination of Blood to the Head Warm Pediluvia will take off this Determination & direct it to the Feet hence it proves serviceable in Delirium Lethargy Apoplexy &c. Many however have objected to their Use in these Cases on Account of their

Stimulus. This is a weak Objection for the Stimulant Effects are in general confined to the Part to which the Bath is applied & when applied to the Feet these Effects are seldom or never extended over the System. As some Part of the Water is absorbed it will sooth the Lymphatic Vessels & Glands, wash away Acrimony, dilute Viscidity, take off all Obstructions in & clean the Glands.

By a Bath made of Broth or other nourishing Substances Persons have been kept alive where Deglutition has been obstructed. The Warm Bath has of late been introduced into more general Use than formerly. The Abbé D'Auteroche a Gentleman of a truly Philosophical Disposition, in his Travels to Siberia observed that the Inhabitants of that Country made considerable Use of the Warm Bath for the Cure of all Disorders arising from obstructed Perspiration with great Success and that the Degree of Heat was so great as to be almost incredible beyond what more civilized Nations had any Idea of. This put the Literati in France upon making Experiments to determine the Degree of Heat the human Frame was capable of bearing— Dr. Fordyce, Blagden & Solander at London found that they could remain in a Room heated to 210° of F. Therm. for 7 Minutes without any bad Consequence following and that even 260° might be submitted to with tolerable Ease. In this Heat Eggs were roasted in 10 Minutes a Beef Steak was not only dressed but dried. These Observations

shou us that our Frame contrary to the receivied Opinions of Boerhaave & others can sustain a much greater Degree of Heat than that which it is naturally of. They have also led to many curious Speculations concerning the Animal Oeconomy & have given Rise to an Opinion that our System has a power of generating Cold to obviate Effects of external Heat & vice versa. Besides these Speculations these Observations have been of great Service in the Practice of Physic. By applying so great a Degree of Heat as never can be employed without Disadvantage many Disorders will yeild more readily than they could formerly do. It is probable that all Disorders arising from obstructed Perspiration, the Scropula & Lues Venerea will be more readily cured than they formerly were.

Two Observations which I am now to make tho' they are not immediately connected with the Warm Bath yet naturally enough arise from what has been said on that Head. The first proves the great Quantity of Water that the Absorbents take up when there is a want of Moisture or Fluid in the System.

Some unfortunate Seamen who were necessitated to take to their Long Boat as the last Resource were almost dying for want of Water, when either by Accident or Design they threw themselves into the Sea & found that their almost unsufferable Sensation of Thirst was quickly removed & that the Evacuation of Urine was increased. They had Recourse to this Method several Times afterwards & always with the same Success. Dr

Dr. Franklin thought this of so much Consequence that he published a short Essay giving an Account of it that others in the like Situation might avail themselves of it—

The second was communicated to me by Dr. Shiell who was formerly in this City & who had experienced the Usefulness of this Application himself. He also recommended it to several others all of whom experienced its Utility. This Gentleman was subject to a most violent Head Ach for several Years which he had never been troubled with till his Recovery from a Malignant Fever which left a Coldness of the Feet. As he was himself a Physician & in Practice he had Recourse to every Application he had ever heard or read of but without Relief. As he had been a Student under Doctor Cullen & entertained an high Opinion of his Medical Abilities he went from Ireland to Edinburgh to consult him— all Dr. Cullen's Efforts to relieve him were in Vain. He then tried the most celebrated Physicians in London but unfortunately for him their Art proved ineffectual. He now gave up all Hopes of Recovery & had Nothing to depend upon but Patience under his Sufferings. He was upon his Return Home in this Situation when he fell in with an old Friend one of his fellow Students at Edinburgh to whom he related the melancholy Detail of his Sufferings & his hopeless State. His Friend advised him to entertain better Hopes and gave him Assurance of Relief provided he would stay with him a few Days & make Use of a domestic Medicine he would recommend to him and which

he told him would increase the Perspiration in his Feet. This was the Summit of his Wishes - he therefore complied with the Request of his Friend & in four Days was relieved of the Coldness of his Feet & Headach. Bay Salt performed the Cure. The Salt is to be made dry before the Fire & then reduced to an impalpable Powder & quilted between woolen or low Cloths - The Thickness of the whole need not exceed that of a Crown Peice. This is to be worn Day & Night applied directly to the ~~Skin~~ Soles of the Feet. The Effects of it are to keep the Feet warm & in a gentle Perspiration. I have recommended it in several Cases & never knew it fail to produce this Effect. In some the Moisture was so great as to oblige them to change the Application twice a Day. If you recollect I told you when treating of Condiments how powerful a Stimulus Salt is to the Animal Fibre you will not be at a Loss in accounting for this Cure viz.t by exciting a proper Determination of the Fluids to the Feet. I formerly mentioned the Use of Salt in Hæmorrhages & that it was the principal Remedy in Hæmoptysies. From this we should learn never to slight the Experience even of an old Woman. It is not always left for Physicians to make Discoveries in Medicine for the greatest Part of our most capital Remedies have been introduced into the Mat: Medica either by Chance or by Quacks & illiterate People.

We are next to treat of some particular Substances employed as Emollients. We observed that Emollients are such Substances as relax the Rigidity of the

Solids, diminish their Cohesion introduce a larger Quantity of Moisture & that they were indicated in Leanness and Dryness, Contractions & other Disorders of this Kind. All Substances containing Mucilage, Oil or Water are Emollients. Warm Water will answer almost every Intention of Emollients as I have seen fo very diffuse on that Head I shall have the fewer Observations to make concerning particular Substances.

Radix Althea or Marsh Mallow Root deservedly holds the first Place amongst the particular Emollients. It may be applied externally to Swellings & Inflamations as a Poultice - we likewise use it internally. A decoction or rather an Infusion of ℥j of the Root in a Pint of Water affords an excellent Remedy in Acrimony of the Fauces. This is also very excellent in Chronic Dysenteries attended with great Pains & Griping where the natural Mucus of the Intestines is generally abraded. A Decoction of it is employed sometimes in Nephritic Cases. The decoction of it is also very serviceable in violent Purgings occasioned by too severe a Cathartic. The Root boiled in red Wine affords an excellent Brush for the Teeth to preserve them and keep them clean. The Root may be given to Children to chew when teething & it is much preferable to the hard Substances commonly given as it will yield to the Gums & not injure them. The Mucilage applied externally will speedily remove the Pain arising from Blisters. The Decoction drank plentifully will prevent the Strangury which is often consequent upon the use of Blisters. Internally it proves very useful in a Strangury Pleurisy & tickling Cough

Externally it is applied to mitigate Inflamation, maturate Abcesses, to sheath Parts excoriated & to remove Pain —

Linseed may be employed in the same Cases with the Althæa. Linseed Tea proves very serviceable in Ardor Urinæ, Nephritic Pains, Coughs, Pluriseis & all Inflamations. The Meal is sometimes employed in Poultices to relax, maturate and take off Pain. The Oil is not so apt to turn rancid as other Oils & is sometimes employed in emollient Glysters. It is also given internally —

Gum Arabic & Tragacanth posess nearly the same Vertues & indeed the Vertues of all the Emollients are so nearly alike that we must determine the use of one in Preference to another merely from Convenience. We in general for external use employ the Farinacea and a Poultice of Bread & Milk is perhaps equal to any of the more compound & apparently more artful Preparations especially if a little Oil or Hogs Lard is added to keep it Moist & to prevent the Chops & Fissures of the Skin which are often produced by the Application of Emollients.

We shall enter upon the Consideration of Stimulants, Gentlemen, at our next Lecture.

Lecture 16th.

Stimulantia.

These are such Substances as excite the Action of the Moving Fibres & do not act on the dead Fibres. Whatever excites Motion or Contraction in an Animal Fibre is a Stimulant. Stimulants are either direct or indirect. The Indirect are those which act upon the Organs of Sense by which a Sensation is formed in the Sensorium Commune and by this a more copious Determination of the Nervous Power into the whole or a particular Part of the System is produced. The Direct are such as act immediately on the Moving Fibres without the Intervention of the Sensorium Commune. Stimulants are divided into the Mechanical & Chemical. In the former the Operation depends upon & can be explained from the Figure - Thus a sharp Knife may stimulate - Here we know the Action depends entirely upon the Edge of the Knife. The Chemical are those in which the Operation depends upon some peculiar Property of the Body with which we are unacquainted. Thus Heat proves a powerful Stimulus but we cannot tell upon what Property that Effect depends. Most of the Stimulants we employ are of the Chemical Kind for their Operation seldom depends upon their Figure or Construction.

The Operation of Stimulants is of two Kinds -

1st. That which is common to the whole System & affects every Fibre indiscriminately. Thus a Knife will cut &

stimulate every Fibre & many of the Saline Substances affect every Fibre indiscriminately.

2dly That which is confined to some particular Part— Thus the Rays of Light affect only the Eyes, Sound the Ears, Odors the Nose &c & a Variety of other Stimulants. The Operation of Stimulants therefore appears to be confined to the Nervous System. This leads me to make a few Observations on the Nerves which I am the rather inclined to do as Dr. Monro after 30 Years Attention to the Brain & Nerves has made some important Discoveries which throw great Light upon the Subject & which had escaped the Notice of all the Anatomists that went before him. I am not here to follow him in his Anatomical Descriptions which you undoubtedly will have in their proper Place but am only to consider the Physiological Part—

Monro observes that the Human Species have more Brain in Proportion to their Size than any other Animal. This is not the case with the Nerves for in the Human Species as well as in all other Animals the Size of the Nerves is in Proportion to the Size of the Body. From this Fact he draws this Conclusion & I think with Reason that the Brain in Man is not formed merely to afford Origin to the Nerves, but is also the Seat of our Mind or reasoning Faculties. From some preternatural Appearances where the animal Functions were carried on when a Child was born with little or no Brain or where the Brain had been almost intirely destroyed by Disease he concludes that all the Nervous Energy is not derived

from the Brain but that it is generated in every Part of the Body. He found also that the Peculiar Structure of every Nerves to its ultimate Ramification & Termination Yet it is probable that it serves the same Purpose to this that the Periosteum does to the Bones. This Opinion of Dr. Monro's seems confirmed from this Circumstance that Insects are not furnished with a Brain - what in them bears a Resemblance to a Brain appearing rather to be the Origin of a Nervey than the Seat of the Sens: Comm: From this we may account with greater Satisfaction for many Circumstances than we formerly could do - Thus we know that a considerable Force may be given to a Limb by a Stimulus applied to it, as Friction. This was supposed to be owing to a greater Determination of the Nervous Power & Blood into the Part being produced, but we can more readily account for it from the Generation of the Nervous Energy in the Limb - This however is not all for Dr. Monro observes that there is a considerable Consent between the Nervous & Vascular Parts by which a greater Determination of the Fluids into the Part is produced. This seems to be confirmed by a Fact mentioned by Mr. Bell of Edinburgh in a late System of Surgery. In the Operation for the Aneurism where the principal Artery is tied tho' no Nerves is included in the Ligature the Parts below became cold & torpid & their Sensibility was increased in Proportion as the circulation in the lower Part became considerable. Dr. Monro found that the different Nerves formed Anastomoses by the Fibres

of one combining with the Fibres of another from a different Part by which Connections are formed between the different Parts of the Body by the Nerves independant of the Brain. This is intirely new. Hence when a Nerve is injured or destroyed the Muscles in other Parts to which it is distributed are not rendered intirely useless but retain some Share of Sensibility & Irritability, from these Connections of Nerves. Dr. Monro supposes that Ganglions are formed by the Fibres of the Nerves mutually blending each giving & receiving Fibres & that their life is to generate the Nervous Energy. This is also intirely new and even directly contrary to former Opinions. Dr. Monro has also found that the Nerves towards their Determination run in a Serpentine Form like the Lines in the Palms of the Hands the use of which appears to be that they may more readily admit of Distension when the Muscles are in Action. From what has been said we may draw the following Conclusions. that many Disorders of the Nerves e.g. Partial Palsies, are intirely partial or Local & that they do not originate in the Sens: Comm: Hence that they may be cured by Local Applications alone; that by the Anastomoses of the Nerves without the Intervention of the Sens: Comm: various Sympathies are formed in the Body. And may we not from a particular Attention to these Anastomoses expect to be able to account for the various Sympathies which take Place

and also to form new ones.2 This Observations will also I think tend to banish all the ~~mad~~ Metaphysical Reasonings which have of late become so very fashionable in Physic and to so little Purpose.

Stimulants are indicated where ever the Motions of the System are inert, languid, weak & slow Hence they are indicated where the Motion of the Blood is suddenly stopped as in Faintings. They are also indicated where there is a Sluggishness & Stagnation of the Humors as in the Cachexy & Chlorosis, likewise in Gangrenes when owing to an Hydropic Edematous or Abject State of the Body. When Gangrene is owing to Inflamation and increased Action of the Solids Stimulants are hurtful but when it is owing to diminished Action of the Solids they are very useful. They are also employed in Intermittents to prevent the Return of the Cold fit when given before the Accession. Stimulants are also indicated in Nervous Disorders particularly in Palsies. The Causes of Palsy are very various. There may be Cases in which Stimulants may prove improper and hurtful but wherever Palsy is owing to a Weakness & Inertia of the Nervous System Stimulants are highly useful. They are likewise indicated in Vertigo Lethargy, Apoplexy & other Disorders of this Kind.

Apoplexy has been divided into Sanguineous & Serous & the Application of Stimulants has been confined to the latter. Some mention a third Species which they say is owing to an Inertia of the Nervous Power

Here Stimulants are undoubtedly proper, but it is difficult
to distinguish this Species from the others nor are we certain
that this Species exists or that it is founded on practical
Observation. In the Serous Apoplexy Stimulants may
be usefully applied externally at a Distance from the
Head to occasion a Revulsion from it & this Way they
may be also serviceable in the Sanguineous Apoplexy,
but as to their external Exhibition in either of these
Cases it appears to be attended with great Uncertainty
and I can have no Idea of its Propriety. They are also
indicated in particular Kinds of Headach, those that
are attended with Paleness, Coldness & Langour of the
whole Body especially when they are of a Nervous
Nature. But when Headach is of the Rheumatic
Kind or is owing to Inflamation Stimulants are
improper. When the Pain is without the Cranium
Blisters & Ether will sometimes give Relief, but
when it appears to be an Affection of the Part within
the Cranium all our Efforts will in general prove
ineffectual. Stimulants are also indicated in
Flatulences, Acescency, Spasms of the Alimentary
Canal which are commonly owing to Weakness &
often times produce Costiveness & Indigestion —
They act here by exciting the Action of the Stomach
and Intestines & thus promote the Digestion of the Ali-
ment & Expulsion of the Faces. These Symptoms, Flatu-
lences, Spasms &c. frequently accompany the Hysteric &
Hypochondriacal Diseases — Stimulants are therefore

frequently indicated in this. They act here principally as Antispasmodics. They have also been employed for the cure of the Gout. Of their use in this Case I shall treat when we come to speake of the Class of Bitters.

Stimulants are hurtful wherever the Actions of the Heart & Arteries are too vigorous. Hence they are improper in all Tumors, Lages, Inflamations & Fevers arising from this Cause.

Particular Stimulants.

This are very numerous of which Dr. Cullen has a great Variety. I am not to treat of all he mentions but shall confine myself to those which deserve to be employed in Medicine.

Melissa or Balm. I should not mention this were it not the Substance most generally employed in this Country in Infusion or Tea as a common Drink for the Sick. Its Virtues are very inconsiderable & happily for the Patient, for as it is given indiscriminately in every Case if it were possessed of much Efficacy it would do Injury. A Physician however who pays any Regard to rational Indications will prescribe it only in those Disorders that are attended with Langour & Debility.

Lavendula or Lavender, in Infusion may be employed in those Diseases owing to Pituita Frigida, that is such as are attended with Langour & Debility in Cases of

Headach when attended with or owing to Langour. It is also recommended in Tremors of the Extremities, Paralytic Affections of any Part of the Body, a Dimness of Sight & Deafness of Hearing.

Mayoram is possessed of some Acrimony with an agreeable Odor. It is useful in all Cases of Langour and Debility hence has obtained the Name of a powerful Cephalic - It is useful in Infusion in Pituitous Asthma & Catarrh when it is not attended with a Fever as it promotes Expectoration & is possessed of a gentle Antispasmodic Quality. It is the strongest & most powerful of the Lap to which it belongs if we except the Marum Verum or Syrian Mastic which has been highly recommended in all those Disorders in which the others of this Class have been employed.

Hyssop & Penny Royal agree pretty much in Virtues. The latter expels Flatulencies & is a powerful Antispasmodic - It will promote Menstruation when this is obstructed by a Spasmodic Affection of the Uterus and it is general employed by the Women in their Debelitie to bring on this Discharge when it is obstructed. Both the Hyssop & Penny Royal are serviceable in Disorders of the Breast when they are not attended with Fever

Of the Mints there are a great Number many of which are employed in Medicine. Pepper Mint is the best. Its Action is more considerable & sooner extended over the whole System than any of the others -

Pepper Mint Water may be employed with Advantage in Vomitings, Hiccoughs Colics & all Diseases arising from Flatulence or Indigestion or Distension of the Abdomen, with Air contained in the Intestines. Hence it has obtained the Name of Stomachic or Carminative. Pepper Mint will relieve an Obstruction of the Menses when it is owing to a Spasm of the Womb or Alimentary Canal.

Sage in many Cases is a good Remedy. It was highly esteemed by the Antients. Besides its Stimulant it is possessed of an Astringent Quality. It affords a Concretion similar to Camphor. Van Swieten recommends an Infusion of Sage for those Night Sweats which follow & often attend other Disorders & are owing to Debility. It has been recommended in Tumors, Palsies, Tabes Alba &c. Sage has been used with the good Women as Balm as a Drink for the Sick but as this is a more efficacious Remedy we should be cautious not to give it when there are Symptoms of Inflamation. We should confine it's use to those Fevers that are attended with Languor & Debility. Sage has been recommended to prevent Abortions when they have become habitual & Nothing is more common than for the good Women to prescribe red Sage for this Intention. Its use is frequently attended with Success in this Case

Another Set of Stimulants is comprehended under the Title of Umbelliferæ. Of these are the following Anise, Caraway, Fennel, Cumin

Coriander, Wild Carot, & Canby Root. The Part of these generally employed in which their Virtues principally reside is the Seed. Of the following only the Roots are employed - Angelica, Burnet Saxafrage, Lovage & Italian Heartwort. These are all Carminative or Anti-spasmodic assist Degestion relieve Headach arising from Crudity, dispell Flatulency, & cure Colics & other Disorders arising from Flatulences.

Angelica has been accounted Alexipharmic & has been highly extolled in Contagious Diseases. It however answers no better than any other Stimulant & Diaphoretic Medicine. The Antients has a great Opinion of Alexipharmic Medicines which they reputed would prevent Poison or Contagious Miasmata from producing any bad Effects in the Body. We now know that no Medicine is properly Alexipharmic and those Substance which were most extolled by the Antients in this Intention were in general supposed of very little Efficacy or are Wholly inert -

Anise & Fennel are the most powerful & most agreable of this Class. A Tea of these Seeds is a very excellent Medicine for Children who from the Acidiency of the Milk are afflicted with Flatulencies & Gripings. They are much preferable to the pernicious Spirituous Liquors generally given by the Nurses in these Cases.

The Wild Carrot has been much recommended

in Calculous Concretions of the Kidneys & Bladder. Its use however in these Cases seems doubtful for it neither dissolves the Stone in nor out of the Body, nor are its Diuretic Virtues considerable, appearing to be only casual. We have however convincing Testimonies of Relief being obtained by the use of this Medicine. It may perhaps act as an Antispasmodic mitigating the Pains arising from the Stone or Gravel which appear evidently to be of a Spasmodic Nature & we know that the Symptoms of the Stone may often be relieved by Opium & other Antispasmodics.

The next in Order are the Siliquosæ. Of these are Mustard, Radish, Horseradish, all the Nasturtiums & Scurvy Grass. All these are employed for the Cure of & preservation from the Scurvy. They are the only Stimulants that can be employed with Safety in this Disease, for as I observed before when we were upon this Disease Nothing is proper but such Substances as are liable to undergo a Fermentation in the Stomach & be converted into our Fluids. These Substances tend to increase the Evacuation by Sweat & Urine while at the same Time they correct the Tendency of the Fluids to Putrefaction. —

Mustard Seed is very serviceable in Paralytic Affections. The Dose is from 2 to 4 Table Spoonfull of the Seed unbruised a Day so as to keep the Body gently open. In this Way I have found it one of the safest & most efficacious Remedies that can be employed in this Case. It never excites a Sensation of Heat in the Stomach nor is there any Danger of Inflamation being excited. By being given unbruised the

Stomach extracts its Virtues slowly & thus the Heat & Inflamation are prevented which would be produced were we to give the same Quantity bruised. Mustard when bruised taken in the Quantity of ℥ß or ℥j. in Powder or Infusion affords us an excellent Emetic. Its Action is confined principally to the Stomach & is not extended over the System. It is particularly serviceable when we want to evacuate only the Contents of the Stomach without affecting the Rest of the System. We may give the Patient a weak Infusion to drink to carry the Operation to what length we please for in the above mentioned Dose it seldom produces more than one Evacuation unless it is encouraged.

Mustard They afford an excellent Remedy in Lethargy, Serous Apoplexy & in all Cases of Languor & Debility. It is of the greatest Use in the last Stages of Nervous Fevers in which there is a great Loss of Sensibility. If it is carried into the Intestines & proves Purgative, some Part will enter the Circulation & will prove a powerful Stimulus to the whole Body. It increases the Secretions by Urine & by Sweat & solves the Spasm upon the Surface.

Mustard is sometimes applied externally to excite the Action of the Heart & Arteries which it does more powerfully & more effectually produces a Derivation of the Fluids from the Part affected than Blisters. We may in many Cases employ Sinapisms with good Effect when our Patient will not suffer us to apply Blisters tho' the Pain arising from the latter is not so great as from the former. We must not tho' in all Cases substitute Sinapisms for Blisters. In Cases of topical-

Inflamation & Inflamatory Fevers they by their great Stimulus will evidently prove hurtful. —

Horse Radish is possessed with similar Vertues with Mustard. It is employed infused in Beer with Mustard as a common Drink in Dropsies owing to Langour & Debility & Obstructions of the Viscera from Sluggishness. Here by its Stimulus it may act as a Diuretic. It may answer very well in this Way as a common Drink for the Patient as it will tend to remove the intolerable Thirst with which Persons in this Disease are generally tormented & will also keep quietly out of the System. It has been recommended in coughs, Hoarseness and particularly in the Humoral Asthma. It is to be given made into a Syrrup with Sugar. All the Siliquosæ are recommended for removing Hoarseness & giving a clear Tone to the Voice.

Agreeing with the Siliquosæ in Vertues are the Garlic Onion & Leek. Garlic has been recommended for the Cure of Worms which it is said to destroy even when applied to the Navel or Soles of the Feet. However this may be, it destroys Worms when given internaly & persisted in for a sufficient length of Time it will generally relieve Persons troubled with them. Garlic proves a powerful Diuretic & Diaphoretic. It appears in its sensible Qualities to approach very near to Asafetida. The Catarrhus Senilis a Disease incident to old Age in which from the Diminution of the natural Evacuations the Humors are thrown upon the Lungs. In this Case all that can be done is to alleviate the Disease for we cannot entirely remove it. This is to be done by increasing the Perspiration

by some Diaphoretic. Garlic & Asafetida are the best Substances we can employ for this Purpose. Their constant use is attended with this Disadvantage that they render the Breath and Perspiration very offensive but this is an Inconvenience that must be put up with. The Garlic should be taken Morning & Evening & swallowed whole for then its Virtues are better extracted & it will more effectually prove Diuretic and Diaphoretic. Garlic has been recommended for the Cure of the Stone but it certainly can have no Effect in this Case. Boiled & roasted Onions have been highly recommended for promoting the Maturation of Boils or Abcesses but I can have no Idea of their superior Efficacy for by boiling they are deprived of all their Acrimony & converted into a mucilaginous Substance. Any simple & more agreable Mucilage will answer equally well—

Coniferæ. Under this are comprehended the Fir, Pine & Juniper. The Virtues of these are nearly the same and are owing to the Turpentine they contain & will therefore be greater or less in Proportion to the Quantity of this Turpentine. The Fir & Pine Tops are often employed in Diet Drinks for sweetning & purifying the Blood. An Infusion of them proves Diuretic & Diaphoretic hence are serviceable in the Scurvy. This has also been found very useful in Eruptions & Foulneses of the Skin which were thought to be owing to a Scorbutic Habit of Body. These Eruptions are generally owing to an obstructed Perspiration by which the Matter which should be thrown off this Way stagnates under the Skin, becomes

acrid & by its Stimulus produces Inflamation whence Pimples Ulcers &c. are produced independant of Acrimony or Impurity. As this is the case no Medicines will tend to remove them but such as increase the Perspiration & have a Tendency to the Superficies. For this Purpose an Infusion of the Fir Tops will answer as well as any Thing else. By this Remedy the late Lord Chancellor Norrington was cured of Eruptions in his Face with which he had been troubled for many Years & for which he had tried a Variety of Remedies to no Purpose. It is of no consequence which Species of the Fir we employ as they are all possessed of similar Vertues. We in general chuse the Shoots of one Year when they are about a Finger's Length.

The Wood & Berries of Juniper agree in Vertues with the Pine or Fir. They are much employed as Diuretic and Carminative. An Infusion of Juniper Berries or Oil of Juniper may be given with Advantage in Spasms or Colics owing to Flatulences, but where there are any Inflamatory Symptoms we ought to refrain from the use of this Diforder. This may likewise be serviceable in the Pituitous Asthma when unaccompanied with Fever. VanHelmont strongly recommends the Rob a certain Preparation which he kept a Secret as a powerful Diuretic in the Dropsy. We do not however trust to this Remedy alone for the Cure of this Diforder. The Rob may serve as a convenient Vehicle for Diuretic Medicines with which it corresponds in Vertues & we should always have this in View never to add any Medicine to a Prescription which does not correspond in Vertues with the principal Medicine. An=

An Infusion of Juniper Berries has been recommended in the Nephritis & in Calculous Concretions of the Kidneys & Bladder but as these are generally attended with Inflamation this Medicine from its Stimulus is certainly highly improper. A Sparm of the Bowells will sometimes so much resemble the Nephritis as to deceive both the Patient & Physician. In this Case an Infusion of Juniper Berries will most effectually give Relief & probably from some such Case they at first tho' improperly obtained the Reputation of being serviceable in the Nephritis.

Balsams. These get their Name from their agreeable Odor & their Property of resisting Putrefaction both internally & externally. They may be defined resinous oily Bodies odoriferous of a consistence between an Ointment & a Liniment or a Resin & an Oil. They are either Native or Artificial. They are also divided into the liquid or the dry. Of the liquid are Balsam Capaiba, the Balsams of Peru, Tolu, Canada & the various Turpentines.

Balsam Capaiba has been much employed for stopping Gleets of the Urinary Passages whether owing to a Venereal Cause or not. It has been commonly supposed in this Case to act as an Astringent. It is however possessed of no such Property for when given in sufficient Quantity it affords a most excellent Laxative. It is evidently a Stimulant & has a particular Tendency to the Urinary Passages as appears from its imparting to the Urine of Persons who take it a smell resembling Violets & a bitter Taste & from its aggravating Gonorrhœa.

Gleets are generally owing to Debility & Stimulants by giving
Tone to the Parts & by exciting an Inflamation & Constriction of the
Mouths of the Glands in the Urethra will often cure them.
Cantharides are often found effectual in curing a Gleet & probably
would much oftener be so were not their Effects so uncertain
for a certain Dose will produce very different Effects in diffe-
rent Persons. Riding a long Journey on Horseback has also
been found to stop a Gleet. In these Cases this Effect is certainly
produced by the Irritation given to the Urethra by which an
Inflamation is produced which causes a Constriction & thus
stops the Mouths of the Glands. Balsam Capaiba may act
in the same Manner. Though not to be given while there
is any Inflamation remaining. From its Tendency to the
Urinary Passages it has this Advantage that it will
exert its Effects without stimulating the Rest of the System.
It has been recommended in the Fluor Albus. In this Case
it may act by communicating the Irritation to the
Uterus from its Contiguity to the Urethra & even when this
Disorder is owing to a general Relaxation it has been
cured by a long continued Use of this Medicine. Combined
with Sal Tart: Vit: it is recommended in the Pituita Frigida,
the Pituitous Asthma as also in glandular Swellings &
Obstructions. We need scarcely repeat the Observation that
we should be careful not to use it where there are febrile
Symptoms.

The Balsam of Peru is applied externally when
a Nerve Tendon or the Periosteum has been injured. It is
used internally from 20 to 40 Drops in a Dose for the Cure of
the Colica Pictonum. Sydenham & Hellary, the Latter of

whom practised Physic for many Years in the Island of Barbadoes, bestow great Encomiums on it in this Case. The latter particularly recommends it for the Cure of the Palsy which is frequently the Consequence of this Disease. It is likewise recommended in Consumptions & Ulcers of Lungs, but on Account of the Fever & Inflamation generally attending these Cases it appears to be improper. In the Pituitous Asthma it is employed not improperly for by its Stimulas it will prove Diuretic & also promote Expectoration.

The Balsam of Tolu is possessed of similar Vertues & is employed in the same Diseases with the Balsam. Peruv.

Turpentine has much the same Vertues. It is strongly recommended by Dr. Pitcairn in the Sciatica when given in large Quantities & persisted in for a length of Time. It may be very serviceable in Cases of habitual Costiveness owing to a weakened Peristaltic Motion occasioning Flatulences & Spasm. It is often used in Cases of obstinate Costiveness in Glysters where it is better than Salt— here it acts as an Antispasmodic. Turpentine combined with the Yolk of an Egg has been found very serviceable in Ulcerations of the Intestines when it can be applied to them. A Fumigation of Turpentine has been found serviceable in relieving the Pain arising from the Hemorrhoides Caeca or Blind Piles.

Gum Guiacum is possessed of similar Vertues with the Balsams we have just mentioned. It is particularly recommended in Arthritic & Rheumatic Cases. In the former it is said to be an useful Remedy. In the latter particularly in the Chronic Rheumatism, it has even been supposed a Specific—

Dr. Pringle in his Diseases of the Army mentions ~~Hemp~~ it the use of it with Approbation. It acts by its Diaphoretic Qualities. We should be very cautious not to use it where there is Inflamation. By being mixed with the White of an Egg becomes soluble in Water as it also does when mixed with the Mucilage of Gum Arabic. ℥ ij. dissolved in ℥ vj. of Water with ℔ss. iij. or ℔ss. iv. of Tart: Emetic will afford us an elegant & efficacious Remedy— a Tablespoonful of this may be taken every 2 or 3 Hours; or which answers equally well it may be rubbed every fine with Nitre & a small Quantity of Tart: Emet: added.

Myrrh is an Exudation of some Vegetable Substances, collected by certain Insects & by them hoarded up in the hollow Trunks of Trees in the same Manner as Wax is collected & hoarded up by Bees, whence it is brought to us in the Grains in which we see it. It was the Substance principally employed by the Antients for embalming & preserving dead Bodies from Corruption. Taken in large Quantities Myrrh stimulates the Stomach & the System in general. It affects the Urinary Passages in the same Manner as the Balsams. Externally applied it resists Putrefaction & hence it is used in foul & sordid Ulcers to prevent the Gangrene. When given internally it will not cure Putrid Disorders on Account of its stimulating & heating Qualities — It has been reckoned Emmenagogue but it has no particular Virtues this Way, acting as all other Stimulants. Boerhaave laid the Cause of many Disorders in what he termed Spontaneous Gluten & inert Fibre & in these Disorders he particularly recommends Myrrh, but as we do not know that this Cause exists we cannot be certain of the good Effects of the Medicine —

Germ—

Gum Benjamin has generally been reckoned Pectoral. The Saline Substance called the Flowers of Benjamin has been thought remarkably so. Its Use appears to be rather Hypothetical in the common Dose of Gr. j. to Gr. iij. We must give it in Doses of Gr. x. or Gr. xx. to produce any Effects even in this Dose its Effects are inconsiderable —

We are next to consider some of the Woods employed in Medicine.

Guiacum. This ever since it was brought into Europe has been thought efficacious in Venereal Cases — Warm Water employed in the same Manner will produce the same Effects of both. The Italian Physicians are so well convinced that they oftentimes use Nothing else in these Cases —

Sassafras has been employed in the same Manner & in the same Intention as Guiacum. The best Method of using it is in Infusion. A continued Use of it may be serviceable in the Cachexy & Fluor Albus. It may also be serviceable in Blotches & Eruptions of the Skin where it acts as a Stimulant increasing the Perspiration. —

Sarsaparilla was used for the same Purposes & in the same Manner as Guiacum with which it was frequently combined. It was for a long Time neglected until M. Fordyce again introduced it into Practice on the following Occasion. M. Kennedy had done great Service in Venereal Cases by what is called the Lisbon Diet Drink or Kennedy's Decoction the Preparation of which he kept a Secret. Many Conjectures were formed concerning this and amongst others it was supposed to be only a Decoction of Sarsaparilla

This was therefore tried & found to be serviceable, particularly in Chronic Venereal Complaints where Mercury had been previously given. When Mercury had not preceded, its use did not answer so well. Where a Salivation had been employed without Effects, where there were Ulcers, Pain in the Bones &c. Sarsaparilla was found serviceable. There is no Doubt however but that the Sarsaparilla is much inferior to the Lisbon Diet Drink. I have it from good Authority that the Lisbon Diet Drink or Kennedy's Decoction will in a short Time cure all Venereal complaints, whether Mercury has preceded its Exhibition or not—

The Cortex Mezereon or Spurge Laurel approaches nearest to the Lisbon Diet Drink in Vitues. It is found of great Service in removing Venereal Ulcers & Pains in the Bones. Take of Spurge Laurel & Liquorice Root each ℥ij slice and boile them in lbs iij Water until only lbs ij remain Let the Patient take this Quantity every 24 Hours for six Weeks he may expect a perfect Cure.

Radix Contrayerva has been reckoned Diaphoretic & Alexipharmic & has been much recommended in Contagious Diseases arising from Putrid Miasmata. It is also given in Nervous Fevers to support the Vis Vitæ & promote Sweat. It is in these cases given from Gr. V. to Gr. x. every two or 3 Hours. It may however be given to ℥ij without any sensible Effect. Since it appears to be of little or no use except it be to trifle with —

Lecture 57th.

We have now finished those Stimulants which could be ranked according to Botanical Analogy. The former are ranked together for agreeing in sensible Qualities. —

Aromatics are certain Substances which joint to an acrid pungent Taste a fragrant Odor of an agreeable Kind. Hence they remarkably affect our Organs of Taste & Smelling. They are all possessed of an Essential Oil specifically heavier than Water. They are in general Productions of the Torrid Zone & agree in Medicinal Virtues as much as in sensible Qualities —

Cinnamon is the most agreeable. It grows naturally only in the Island of Ceylon from whence it is brought by the Dutch. It is said that when too great a Quantity of this has been imported, the East India Company order a Quantity of it to be burnt that the Price of this valuable Article may not be lessened. It is the best Cordial Stimulant in all Cases of Debility & Languor. Autumnal Intermittents are frequently attended with this. The Oil of Cinnamon is one of the best Remedies we can employ in this Case. A single Drop is sufficient for a Dose. We should always prefer the Oil which arises towards the End of the Procss. Cinnamon is frequently added to Purgatives to prevent the Harms arising from their Use. Thus it is very properly added to an Infusion of Senna. It is also added to Rhubarb to increase its Purgative Quality & sometimes to increase its Astringency. When we add Cinnamon to Decoctions with a View of increasing their Purgative Qualities we should not put it in till towards the End of the Decoction, but when we want its

Astringent Qualities we should add it at the Beginning & let it remain the whole Time. Cinnamon is the safest & most agreeable Stimulus to Lying in Women when they require the use of such Medicines. It is a very good Carminative & is therefore useful for Children who are troubled with Gripings & Flatulency. When a Suppression of the Lochia is owing to Spasm or Relaxation & Flatulency in the Alimentary Canal Cinnamon is a safe & efficacious Remedy.

Cloves are more acrid & stimulating. The Oil is sometimes added to stimulating Medicines but as it is highly acrid we should be cautious not to be too free in its use. It is sometimes employed in the Tooth Ach. A Drop is put into the hollow Tooth to destroy the Sensibility of the Nerve. Cloves are useful in Paralytic Affections of the Tongue when the Patient is able to chew them. They are also employed internally in Colics, Vomitings & Hiccoughs. They are useful applied to the Stomachs of Infants that are troubled with Flatulencies. A weak Infusion or Tea may also be given in these Cases when they are not attended with Fever.

Nutmegs are the Fruit of a Tree a native of the East Indias upon which they are said to grow in the same manner as our Hickory Nuts here. It is said that they are all put in Lime Water in Order to prevent their germinating. In their fresh recent State they are possessed of a Narcotic & stupefying Quality. Bontius who practised Physic many Years in the East Indias observes that those Persons who use the recent Nut freely were often affected with Stupor & sometimes with an Apoplexy. Hoffman relates the Case of a young Woman who upon taking a large Quantity of Mace to promote the

Menstrual Discharge was seized with a Deliriam that continued several Hours. From this Narcotic Quality of their Astringency Nutmegs are useful in Diarrhoea & Dysenteries They are also useful in Relaxation & Debility of the Stomach.

Mace is possessed of the same Vertues & is a Production of the same Tree growing round the Nutmeg in Form of a Network.

Pepper when finely powdered will excite Hiccough. It is employed by the Country People for the Cure of Intermittents. A Table Spoonful of ungrocard Pepper is taken in a Glass of Rum ½ an Hour before the Fit comes on which it often prevents by keeping up a constant & mott disagreable Warmth which it communicates to the Stomach. If however it has not the Effect of putting off the Fit the Patient is sure to suffer severely for his Temerity when the last Fit comes on. From this we see that it is an ambiguous & even dangerous Remedy and we ought therefore never to prescribe it for this Purpose.

Serpentaria Virg: or our common Snake Root is a powerful Stimulant with an Aromatic Flavor. It powerfully resists Putrefaction Hence is employed in Malignant Fevers. In the Beginning of these Fevers where there is an Inflamatory State, Stimulants are hurtful but in the Decline when the Constitution has become weakened & the Powers of Life are low Stimulants are necessary then Snake Root is one of the best Remedies we can employ. It is also an excellent Preventative against Contagious Disorders. It is generally hurtful in Vernal Intermittents or Autumnal

of the Inflamatory Deathes which generally prevails in
these. But in Autumnal Inter. & Remittents it is one of
the best Remedies & I scarce ever omit prescribing it in
these. Likewise order it in all Nervous Fevers where it
proves a most excellent Remedy. It is hurtful only
when there are Inflamatory Symptoms. Provided the Fever
is of the Intermittent kind we may use Snake Root Tea in the
Intermission with Advantage. It is highly useful for the Nausea
~~which~~ which generally Attends Autumnal Remittents. We
oftentimes cannot give the Bark on account of the Nausea
which it excites. In this Case I have found Nothing preferable
to giving the Bark in a cup of Snake Root Tea which will
often be retained in the Stomach when every Thing else is
rejected by Vomiting. Strong Snake Root Tea is one of the
best Remedies for the violent & dangerous Diarroughs which
sometimes occur in Remittent Fevers. In one Case of this
kind in which I prescribed this it operated like a charm.

Ginseng is a Root which is in great Esteem among
the Chineses. This they employ for preventing & curing all
Diseases & think it conduces to prolong Life. They formerly
procured it from Tartary & the Chineses valued it so highly
as to give treble its Weight of Silver for it. That it was
found to grow very plentifully in this Country was some
Years ago a valuable Article of Commerce but from being
carried to China in very large Quantities some of it
probably being of an inferior Quality the Chineses came
to consider it as a fraudulent Imposition & therefore did
not value our Ginseng near so highly as that of Tartary.
Notwithstanding the great Esteem in which it is held
by the Chineses Ginseng is possessed of little or no Virtues. It may
serve as a safe & agreeable Masticatory to Persons who

require such an Amusement is much preferable in many Respects to the nauseous Herb Tobacco.

Cascarilla has been employed in Putrid & Malignant Fevers but is by no Means equal to the Peruvian Bark. Dagner employed it in the Dysentery. Besides its stimulating it is likewise possessed of an Astringent Quality & Narcotic Vim it may therefore probably prove serviceable in Chronic Dysenteries.

The next Class that agree in sensible Qualities are the Bitters. Of these the first is

Wormwood. This with Worm seed & many other Bitters has been reckoned very serviceable for Person troubled with Worms. This Virtue seems to be ascribed to Bitters upon no good Foundation for Worms will live a considerable Time in their Substances out of the Body without showing any Uneasiness. A long continued Use of Bitters may however by giving Tone to the Intestines prevent the Generation of Worms. Wormwood has always been esteemed for its Diuretic Virtues hence it has frequently been employed in the Dropsy. Its Diuretic Virtues may be considerably increased by combining it with Sal. Tart. ℥ij or ℥ß. Sal Tart. dissolved in ℥viij of an Infusion of Wormwood affords one of the best Remedies hitherto discovered for the Cure of Dropsy. Wormwood has been used for the Cure of the Jaundice. It can have little or no Effect in removing the Obstructions on which this Disorder depends. It may however from its Bitterness prove serviceable to Persons afflicted with the Jaundice —

supplying the Place of the Bile. A Decoction of Wormwood with an Addition of a large Quantity of Common Salt is applied externally in Gangrenes. A long continued Use of Wormwood affects the Eyes with an uneasy Sensation of Dryness, Contraction, Weakness & Inflamation attended with a Headach as also a Singing of the Ears & Giddiness. These Effects seem to depend on its Narcotic Quality ——

Carduus Benedictus was formerly employed in those Cases in which the Bark is now given. It may still be used with Advantage in some Cases. Thus in the Beginning of Intermittents when we cannot give the Bark we may give our Patient a cold Infusion of Carduus which will often produce a distinct Intermission and thus give an Opportunity of exhibiting the Bark

Camomile Tea was the Substance most generally employed where we now give the Bark before this Last was discovered. It is a powerful Antiseptic and resists Fermentation of every Kinds. It may often be used with Advantage in Intermittent & Remittent Fevers & probably would be useful much oftener were it not so apt to prove Purgative. It is very useful to work off a Vomit with as it does not relax the Stomach so much as warm Water & some Part of it will be taken into the System & prove Diaphoretic & Diuretic. I

Tansy is said to preserve Animal Bodies from Putrefaction. Women employ it for the Hysterics they also use it in Pediluvia to promote the Menstrual Discharge. In the German Philosophical Transactions it is

recommended in the Dropsy. It may act as a Diuretic in the same Manner as Wormwood. The Seeds of Tansy are reckoned good against Worms but they will act no better than any other Bitter.

Orange Peal contains a large Portion of Essential Oil. It appears to be heating & stimulating & is very useful in Pains & Flatulence arising from Indigestions when these Complaints are not attended with Fever—

Centaury Minor & Gentian agree very much in Virtues. They are both pure Bitters, are Species of the same Genus. Gentian & Orange Peal are the principal Ingredients in what is commonly called Stoughton's Bitters & which is so much employed to strengthen the Stomach. By a long continued use of this & all other Stimulants the Tone of the Stomach is destroyed. The Root of Gentian is employed by the Surgeon in Fistulous Ulcers to keep them clean & to prevent the Lips from growing together. An Infusion of Centaury will answer the same Purposes as Camomile Tea. Centaury and Gentian are employed for the Cure of Intermittents— The Dose is ℥ℌ. every half hour or hour. They are much inferior in this Case to the Peruvian Bark —

Columbo Root is a strong & pure Bitter & a powerful Stimulus. I have found it particularly serviceable in checking bilious Vomiting, which attend Remittent Fevers particularly in the Case of a Lady in whom the Stomach was very irritable who was relieved by this Remedy when several others had failed. She has not had a Return of her Complaint since which is now about a Year

Since that Time I have given it frequently for checking Vomitings. The Manner in which I generally employ it is to infuse ℥ß. in about ½ Pint of boiling Water - After this has grown cold, 1, 2 or 3 Tablespoonfull of it are to be taken every 2 or 3 Hours. It is also said to be a powerfull Antiseptic but I have never had an Opportunity of experiencing its Effects in this Way.

Peruvian Bark is so much employed in Medicine that it will deserve a particular Attention.

This was first made known to the Governor of Loxa who by his Entreaties & friendly Offices, obtained from the Natives a Knowledge of the Remedy with which they cured their Intermittents. He communicated it to the Spanish Viceroy the Count de Chincon whose Lady was dangerously ill of an Intermittent, 1638. It was brought into Europe by the Count de Chincon in 1649. A Jesuit brought a Quantity of it to Rome and hence it obtained the Name of Jesuits Powder or Bark. It was sold by these Fathers at an exorbitant Price. Two Drachms were in general sufficient to perfect a Cure. It was afterwards neglected until Sr. Robert Talbot again employed it with great Success in 1679. tho he kept it a Secret yet it was only known under the Name of the English Powder. Louis 14 V. purchased the Secret for a Premium of 2000 Guineas & likewise allowed Sir Robert an annual Pension of 100 Guineas during his Life. Since that Time it has been universally known and generally employd sometimes with & sometimes without

Propriety. Good Bark may be known by its Weight. Firmness Brittleness & shining Appearance when broken. The best Method however to judge of its Goodness is by making a Decoction of it in Rain Water. For this Purpose ℥j or ℥ij may be boiled in a little Rain Water. The Decoction is to be poured into a clean Glass. If it appears red while warm but upon cooling turns White or pale & deposits a Sediment we may conclude that the Bark is good but not otherwise.

Bark has been employed in a Variety of Disorders & has generally been supposed to act by some Specific Property.

It is manifestly a Bitter combined with Astringency with some Degree of Aroma. From these Qualities I think we may explain its Virtues in all Cases in which it proves serviceable.

It is useful in those Diseases in which there is a general or partial Debility, but it is hurtful in those that are attended with Rigidity, Plethora, Fever & Inflamatory Symptoms. In Vernal Intermittents in which there are generally Inflamatory Symptoms the Bark commonly proves hurtful. In the Autumnal in which some Degree of ~~Debility~~ Putrescency & Debility take Place from the first Invasion, Bark proves an useful Remedy. When Obstructions are owing to Relaxation & Debility by which the Solids are unable to propell the circulating Fluids whence they stagnate the Bark by giving Tone & strengthening the Solids proves very serviceable; but when they depend on Rigidity or a too vigorous Action of the Solids or upon Plethora the Bark is injurious. The best Method of exhibiting it is in Substance from ℈ß. to ℥j. every 2 or 3 Hours or oftener according to Necessity. When given in Infusion or Decoction it does not answer so well as when given in Substance as it is more apt to

run off by Stool or Urine & defeat our Intention. The Bark is indicated in all periodical Spasmodic Affections which depend on Mobility & Irritability of the System. Acts here by restoring Tone to the System & taking off Relaxation on which Mobility & Irritability generally depend. When there are Inflamatory Symptoms we should avoid the use of the Bark until they are removed. Thus the Chincough which is evidently a Spasmodic Disorder may frequently be cured by a judicious Administration of the Bark. In the Beginning of the Disorder when there are Inflamatory Symptoms or during the Paroxysm the Bark is highly improper; but in the latter End of the Disorder or those Days when the Disorder is moderate it proves a valuable Remedy. The Bark is a useful Remedy in periodic Colics which return at stated Periods. In Epilepsies which depend on Mobility and Irritability the Bark may sometimes be of Service by taking off the Relaxation on which these depend & restoring Tone to the System. It is of the greatest Service in Gangrenes that are owing to Relaxation & Debility of the Solids. In this Case when there is imminent Danger we should pay no Regard to the Quantity. We may give it in as large Doses & as often as the Stomach will bear. From ℥ß to ℥j may be given every ½ or ¾ Hour. We may also apply it in Fomentation externally at the same Time. It is not a Specific in this Case but acts by strengthening & restoring the Action of the sound Parts, whence an Inflamation & Suppuration are brought on by which the mortified Parts are separated from the sound. When Gangrene is owing to Inflamation & increased Action of the Heart & Arteries the Bark is certainly improper

and acidulated, diluting Drinks are the best Remedies. I formerly explained how Inflamation might be occasioned by Relaxation & Debility of the Solids as well as by their increased action. In the former Case the Barks may be employed with advantage in the latter it is evidently improper. The principal & most general Use of the Barks has been for the Cure of Intermittent & Remittent Fevers. In this it has also been supposed to be Specific. Its Virtues however depend on its Bitterness Astringency & Aroma were it possible to make a Combination by Art in which these Properties would exist in the same Perfection, I do not doubt but it would prove equally Neutral in the Cure of Intermittent & Remittent Fevers as the Peruvian Bark. Bitters and Astringents have at all Times been recommended for the Cure of these Disorders & I have known a Mixture of Galls & Gentian cure an Intermittent in which the Bark had been tried to no Purpose which probably was owing to an inferior Quality of the Bark.

Various Opinions have been formed concerning the Proximate Cause of Intermittent Fevers. The most antient Opinion is that the Disease is brought on by a Morbid Matter lodged in the Body & that the Cure consisted in evacuating this Morbid Matter. This Opinion appears to be ill founded if we attend to the following Considerations. The Fit may be prevented & the Disease often cured without any Evacuation. Thus we may often prevent the Fit by giving Anodynes a short Time before this used to return. These certainly do not produce any Evacuation but rather check & perhaps intirely suppress the usual Evacuations. The

The Disease is not to be cured by Evacuations alone. Bleeding and Purging will never cure the Disorder tho indeed are frequently hurtful. Emetics indeed frequently perform a cure without the Assistance of any other Remedy; but that they do not act by merely evacuating the contents of the Stomach is evident from this Consideration - that they will answer as well if not better when they do not produce vomiting as when this is excited - The Bark does not increase any of the Evacuations yet performs the cure - —— Another Opinion is that the Cause consists in an Accumulation and Sentor of the Humors in the extreme Vessels on the Skin - This is certainly false for the very Reverse takes Place - The Blood is driven from the Superficies & is accumulated in the Viscera —— A third Opinion is that the Disease is a Nervous Affection with a Spasmodic Constriction of the extreme Vessels on the Skin & hence the Cause is placed in the Nervous System. This Opinion appears to be the most probable & several Circumstances tend to confirm it - The Medicines employed to cure the Disease are all of an Antispasmodic Nature. Affections of the Mind will often cure the Disorder & will as often produce it - Nervous Diseases are often known to become Intermittent & Vice Versa. I knew a Gentleman afflicted with a periodical Colic which returned every Day at a particular Hour. One Day at the Hour on which the Colic used to return he was attacked with the Fit of an Ague and no Symptoms of the Colic appeared. The next Day the Colic returned when he was freed from his Intermittent. The Disorder continued in this Manner changing from Colic to Intermittent & from Intermittent to Colic until a Stop

was put to it by the life of proper Remedies. Some have endeavored to place the cause in an Inertia of the Nervous Fluid, but this it is difficult to determine. The regular Return of the Paroxysms has at all Times afforded great Matter for Speculation Many Opinions have been formed to account for this but none of them are satisfactory. In a late Publication on this Subject it has been attempted to account for it from Habit. It is observed that Custom or Habit has a great Influence on the Animal Economy in many Cases & it is supposed that its Effects may be extended to the regular Return of Intermittents. However specious this may appear at first Sight it will appear to be false if we consider that in Order to any Thing becoming habitual it must have continued for some considerable Time & therefore that Habit or Custom can have no Influence on the first two or three Paroxysms. This too are in general the most regular & the Return of the 5th afterwards becomes more irregular - whereas if this Return depended on Custom or Habit the longer the Disorder lasted the more regular should the Paroxysms become & at length their Return should be as regular as the Motions of a Clock.

The Bark should not be used for the Cure of Intermittents until we have restored the Determination of the Fluids to the Skin. We generally premise Emetics to the Use of the Bark to produce this Determination to the Surface which they will more effectually do if a Dose of Laud: is given after they have operated. This produces an universal Relaxation of the Body, increases the Circulation & hence powerfully promotes Diaphoresis and Sweat. This is seldom perfectly produced after the

first Fit there it is customary to let the Patient have 2 or 3 Fits before we give the Barks. It is also very useful to premise Neutrals or Emetics as Diaphoretics. These will certainly contribute much to shorten the Disease & to render the Cure more certain. In general we may observe that the Autumnal Intermittents are more tedious & more difficult to cure than the Vernal. The Autumnal are generally attended with Debility & Putrid Symptoms, the Vernal with Inflamatory Symptoms & may frequently be cured by Bleeding & the Antiphlogistic Regimen without the Use of any other Remedy. The Bark is best calculated for Autumnal Intermittents —

As soon as a Person is seized with a Fit of an Intermittent he should be put to bed. During the cold Fit he should abstain from Drinks as much as Possible, for every Thing he takes will tend to increase the Weight, Oppression and Restlessness. If however he has an Inclination to vomit he should encourage it by drinking warm Water or Camomile Tea. By this Vomiting the Fluids which were before accumulated in the Viscera will be determined to the Surface & by this the Paroxysm will be greatly relieved. During the hot Fit the Patient may drink Acidulated diluting Liquors. He should also take a Solution of Sal Amm: or some Neutral Mixture which will tend greatly to produce a Diaphoresis & shorten the Paroxysm. The Headach which is often very troublesome may be much relieved by throwing a Veil over the Face which confining the Heat a Perspiration is produced there which greatly contributes to the Removal of the Headach. During the Intermission the Patient should avoid all Food

that is liable to ferment in the Stomach, as ripe acescent Fruit, Milk, Cabbage - all Food that is difficult of Digestion as Fish, salted Meats, Cheese in a Word every Thing that tends to produce Refrigeration as it is termed. His Diet should consist principally of Animal Broths with Vegetable Substances well boiled. If the Patient is troubled with Flatulencies & Pains in the Back & Loins we may give a gentle Purgative. We may flatter ourselves with the Hopes of the speedy Recovery of our Patient if the 5th Paroxysm is neither longer nor more severe than the preceding ones; if the Urine separates & deposits a lateritious Sediment - if the succeeding Paroxysms become milder; if about this Time Eruptions appear about the Lips or Nose - If these appear earlier in the Disease it is a Sign that it will be tedious. If the Paroxysm is very severe, attended with Bleedings from the Nose, Vomitings Diarrhoea with Evacuations of Blood, Pain of the Oesophagus with cold Sweats & Stupor &c if the cold Fit is not succeeded by the hot & sweating Stages we should never delay administering the Barks they all Means prevent another Succession.

In this Case little Regard is to be had to the Quantity but as much is to be given as the Patient can swallow. I have known ℥ss. taken in less than an Hour - If the Stomach cannot retain enough to prevent another Paroxysm we are then to administer it in Glysters. In Ordinary from ℥ss. to ℥j may be given every 2 or 3 Hours. From the Observations of Dr. Cullen it appears that the nearer we give the Barks to the Time at which the Paroxysm is expected the better - Dr. Home contradicts this. In my own Practice I follow Dr. Cullen's Advice.

I generally begin about 6 Hours before the Paroxysm is expected so that from ℥ iv. to ℥ vj. may be taken before its Accession and this Way I find more effectual than that of giving the Bark at longer Intervals. If the Patient does not take this Quantity it will seldom put off the Fit & this Quantity seldom fails. After we have prevented the Paroxysms of an Intermittent the next Thing we are to do is to prevent a Relapse. For this Purpose the Patient should take a few Doses of the Bark for a few Days after the Fever has left him. On the 7th or 8th Day he should 5 or 6 Doses of Bark as Relapses more frequently happen on the 9th Day than at any other Time. Persons inhabiting a low marshy Situation are more liable to Relapses than any others. For this therefore a Change of Air is necessary or if this is not practicable they should at least confine themselves to the upper Stories of the House. Relapses are likewise more common in Autumn than in the Spring. Every Thing that tends to weaken & enervate the Body disposes to them & should therefore be avoided. Intermittents resemble other Disorders, as periodical Rheumatisms. Intermittents attacking the Face &c. are all to be cured by the Bark. Sydenham's Account of this Species of Intermittents is so excellent that from it you can never be at a Loss to know it when you meet with it. On Account of his judicious Observations on this & many other Subjects I would recommend his Books to you as worthy of a constant Perusal. "The same Cause" says he "which produces Intermittent Fevers frequently also occasions Disorders which return periodically at the same Hour without Shivering, Heat often without Quickness of Pulse. Such Disorders generally observe the Intermissions of Quotidian or Tertian Fevers,

but seldom those of Quotans. I have seen violent Comitings & Reachings to vomit with inexpressible Anxiety, the severest Oppressions, the most racking Colics, dreadful Palpitations and excessive Toothachs. Pains in the Head & very often unaccountable Pain over one Eye, the Eyelid, Eyebrow & Temple of the same Side of the Face with a Redness of that Eye & a continual voluntary Trickling of Tears. I have also seen such a prodigious Swelling of the affected Part that the Eye stood out an Inch from the Head covered by the Eyelid which was also extremely inflated or puffed up. All these Maladies begin precisely at the same Hour, last about the usual Time of a Fit terminating without any sensible Evacuation & return exactly at the same Hour the next Day or the Day after".

"There is but one known Medicine which can oppose this Sort which is the Bark. Nothing affords Relief in the Fit & no other Medicine ever suspends or puts it off. But I have cured some of these Disorders with Bark & especially those affecting the Eyes, which happen oftener than the other Symptoms, after their Duration for several Weeks & after the ineffectual use of Bleedings Purgings, Baths, Waters, Blisters & a great Number of other Medicines. If a sufficient Dose be given the next ~~Fit~~ ^ is very mild, the 2d. is prevented & I never saw a Relapse in these Cases which sometimes happens after the Fits of a common Intermittent are cured." Vide Tissots Advice to the People Pages 285-6 of the London Edition in 1765." & Pages 144-5 Philad.a Edition 1771.

Lecture 18th.

The Bark has been unjustly accused of changing Intermittents into Dropsies, Jaundice & other Disorders owing to Obstructions of the Viscera. It is so far from producing these Disorders that by curing the Fever, which by continuing a long Time produces them, it is the principal Means of preventing them, and when they are produced Nothing is more powerfull in removing them than this Remedy.

The Bark is employed with the greatest Advantage in all Intermittent & Remittent Fevers that are accompanied with a Putrid Diathesis. Dr Cleghorn in his Treatise on the Diseases of the Island of Minorca gives an Account of Intermittents that prevailed there with evident Symptoms of Putrefaction. When the Bark was not given at the first Intermission or Remission the Patient generally died. He therefore carefully watched the Time of Intermission & when the Bark was then given he found it would succeed in Cases that were deemed desperate. In these Cases the Bark acts as a powerful Antiseptic. Whether it is useful also in Putrid Fevers that are without Intermission is doubtful. It may indeed in these act as an Antiseptic in the Prima Viæ but as it does not enter the Circulation it does not extend its Antiseptic Effects over the System. Dr Hillary in the yellow or bilious Fever of the West Indies trusted the Cure principally to acidulated diluting Drinks and condemns the Use of the heating & stimulating Medicines which are commonly employed as Antiseptics. We had a remarkable Instance of the Inefficiency of these Medicines the last Time the Yellow Fever was imported into this Place. A whole Family was seized with this Disorder Part of which was but under the Care of an eminent Phy-

Physician of this City who treated them as usual with giving the Barks & other Medicines that are supposed highly Antiseptic. All of those however under his Care died while the remaining Part of the Family who had no Medical Assistance but were left to shift for themselves & who had used Nothing but Fruits & other acescent Substances, recovered In the Beginning of Putrid Fevers if we employ the Barks it will generally prevent their further Progress. It may also be of great Service to preserve healthy Persons from the Contagion. After the Putrefaction has advanced & has entered the Circulation Vegetable Acids with a decided diluting Drinks are chiefly to be relied upon. They may be accompanied with the Use of the Barks. Bark it will answer best in Infusion especially in Wine as we want only its Antiseptic Qualities with its astringent ones. It proved serviceable in the Camp Fever which was common here some Time Ago which I always considered as a Nervous Fever attended with a greater Degree of Putrefaction than usually accompanies those Fevers. In this I used the Vinous Infusion or Decoction of Barks & found it prove more serviceable than any other Preparation

when Putrefaction is confined to the Prima Via the Bark may prove a valuable Remedy but when this enters the Circulation & the Fluids of your Body become affected those Medicines whose action is confined to the Prima Via will not answer so well as those which enter the Circulation & prove Antiseptic here.

Bark is indicated in Hæmoptoe & other Hæmorrhagy. When they are owing to an increased action of the Heart & Arteries the use of the Bark is dangerous but when they are owing to Relaxation & Debility the Bark is a safe & useful Remedy. It is employed to prevent the periodical Return of Hæmorrhages which it does by giving Tone to the System & strengthening the relaxed Vessels.

Bark is an excellent Remedy for Persons of a weak & feeble Constitution & for Weakness of any particular Part. Chewing to the Quantity of ℥ß. a Week will be sufficient in these Cases. Used in this Way it is highly serviceable to Persons that are very subject to Inflamations in the Throat when exposed to cold Air.

The Bark is employed in bad Ulcers to produce good and laudable Pus. It acts here by giving Tone to the Vessels & producing that Degree of Inflamation which is absolutely necessary for the Formation of good Pus. The Bark, probably from observing its good Effects in Ulcers, is employed in the Small Pox to make the Pustules fill & bring the Disorder to an happy Issue. It should in this Disorder employ it immediately after the Eruption of the Pustules. It can only be employed with Safety & Advantage when the Constitution is so much debilitated that Nature is unable to struggle with the

Disease & would be in Danger of sinking in the Contest. Here it will raise the Pulse, give Tone to the System & produce a Degree of Inflamation proper for the Formation of Pus. In this Case some Physicians employ Wine, even where there is a Delirium. If Petechiæ & purple Spots appear we are to have immediate Recourse to the Bark. When there is an Inflamatory Diathesis or when the Action of the Heart & Arteries is too vigorous the Use of the Bark is certainly highly improper and the Antiphlogistic Regimen & even Bleeding become necessary. The Bark has been used by some in the Suppuratory Fever but its Use here seems rather doubtful. This is brought on by the Pus being absorbed & carried into the System. The best Method is to carry it off by gentle Purgatives & to employ Acid & Antiseptic Drinks.

The Bark has been employed with Success in Scrophulous Sores & Ulcers. These are generally owing to Relaxation & Flaccidity of the Vessels of the Part & universal Relaxation of the System in general. The Bark by removing the partial Relaxation & giving Tone & Strength to the System in general often proves a valuable Remedy. But as this Disorder is sometimes not to be cured by any Medicines whatever no Wonder that the Bark sometimes fails.

The Bark has been said to cure Cancerous Complaints & if we could trust to the Accounts given by Physicians, it has even cured real Cancers: Probably however an Ulcer of a bad Quality may have been mistaken for a Cancer & in this the Bark would prove serviceable but it is doubtful whether it ever ~~proved serviceable~~ succeeded in a single Case of real Cancer.

Or

On Account of its Efficacy in Ulcers some have thought of extending the use of the Barks to internal Ulcers & they have accordingly recommended it in Consumptions. In these however it must certainly prove hurtful on Account of the Inflamatory State which almost always accompanies them. It has likewise been recommended in Scrphulic Complaints but in these it will answer no better than any other more simple & less stimulating Astringent.

The Barks has been highly extolled for the Cure of the Gout but we shall have Occasion to speak more particularly of the Medicines employed in the Gout hereby.

In the Rickets if accompanied with a proper Regimen & the Use of the Cold Bath the Barks may be employed with great Advantage. In this Disease the greatest Relaxation takes Place which extends even to the Bones which become soft & flexible. The Patient can never expect to recover perfectly at least with Regard to Shape & Figure: but by a proper Use of Astringent Medicines with the Cold-Bath & by living on solid Animal Food with a high dry & cold Air the Disorder may be considerably relieved.

We come next to treat of the Pharmaceutical Treatment of the Barks.

I have already observed that we should give it in Substance if possible & in as large Quantities as the Stomach will bear. When the Patient either will or cannot take the Powder we must give it in Infusion in Water or a Spirituous Tincture. By cold Water we can best extract the Astringent Virtues of the

Barks but not its Bitterness - By boiling Water it loses its Astringency - By Brandy or any Spirituous Menstruum we extract the Bitterness but not Astringency - A vinous Infusion is the weakest of all & has little more than the tinture of Wine.

With Regard to that Species of Barks which has lately been introduced into Practice it appears from some Experiments made by Dr. Kentish that the Red Barks as it is called is a stronger Bitter than the common pale colored or Quill Barks - that it is not so powerful an Astringent and a weaker Antiseptic. It likewise appears from him that the two are not of the same Species as was at first supposed tho' of the same Genus. There are 4 Species of the Barks in South America. From its being a more powerful Stimulant the Red Barks is preferable in Autumnal Intermittents & perhaps in no other Case. Wherever we want the Astringent or Antiseptic Effects we must prefer the common Barks. It is said that a Species of Barks has lately been discovered in the Island of St. Lucia.

A Root has lately been discovered in the Island of Surinam & St. Vincents which is said even to excell the Barks in the Cure of Malignant & Remittent Fevers. I mean the Radix Quassiana so called from a Negro Man named Quassi who first discovered its Virtues. From him it is likewise called the Quassi Bitter. It is the strongest & purest Bitter in Nature. It has been employed with great Success in all Putrid Intermittent & Remittent Fevers Dr. Warner a Gentleman of extensive Practice in the

Island of Antigua assures us that he has employed it with Success in these Cases even where the Bark had failed. He likewise observes that the Patients retain it better on their Stomachs than the Bark. In the Countries in which it is found the Inhabitants use it as a Preservative against the dangerous Remittents so common there. It may be given either in Substance or Infusion. The Dose in Substance is from ℥ß. to ℥j. It yields its Virtues readily either to Water or Wine. When used as a Preservative a Vinous Infusion is generally preferred.

Acorus Verus or our common Calamus is a Stimulant & Astringent. It approaches in Virtues to the Peruvian Bark & was formerly employed in those Cases in which the Peruvian Bark is now employed. On Account of its Stimulus it is employed to excite the Appetite & assist Degestion. It is useful in Colics & Flatulencies arising from Indigestions or from Air. It may be useful in the Catarrhus Senilis & Asthma Pituitosa by its Stimulus promoting Expectoration. Fallopius tells us that he employed a Decoction of this in Rhenish Wine for a Suppression of Urine & assures us that he never failed of Success. In Paralytic Affections it may be of Service. It may be given combined with Salts in a very relaxed State of the Stomach & in this Way it proves most effectually stimulating & strengthening

Chamæpitys or Ground Pine with some other Bitters form the Gout Powder commonly called the Duke of Portland's Powder. The Composition & Method of using it is as follows. Take of the Root of Birthwort ℥j. Gentian, the Tops & Leaves ℥ß Germander, of Ground Pine

and Centaury each an equal Quantity, reduce them into a fine Powder. Of this ℥j is to be taken every Morning fasting & Nothing is to be taken for an Hour & an Half after it. This Course is to be continued for three Months - After this 3/4 of a Drachm is to be taken for 3 Months longer. During the next 6 Months ℥ß. is to be taken every Morning It will then be sufficient to take ℥ß every other Morning This Course is to be continued for two Years without Intermission in Order to obtain any Benefit from it. The Recipe & Method of using it were published by the Duke of Portland after he had by the Use of it been freed from a painful hereditary Gout. It was after this used by several Persons & it generally proved effectual in preventing the painful Returns of the Gout in Inflamation of the Extremities. It is by no Means a newly discovered Medicine. Bitters have a long Time been employed for the Cure of the Gout even by the Antients. They distinguished the Gout into the Sanguineous, Bilious & Pituitous from the Nature of the Fluids which they supposed produced the Disorder. In the Sanguineous they used the Lancet freely - In the Bilious they also bled & in all used griping Stimulating Purges, especially the Pituitous: After this they put the Patient upon a Course of Stimulating Bitters which they generally gave made into an Electuary with Honey. Of this ℥j or the Size of a Hazle Nut was to be taken every Morning. This Course was to be continued for a Year. Every 2 or 3 Months a Purge was to be given They generally chose to begin the Course Spring or Autumn. For Persons of a cold Phlegmatic Habit of Body,

the Spring was preferred - For those of a hot, dry, bilious Habit they chose the latter End of Autumn. They did not however administer this indiscriminately to every Constitution. They allowed them to be hurtful to those of a hot bilious Habit & supposed them to be serviceable principally to those of a Phlegmatic Habit. They also only employed them in recent Cases of Gout & thought them unsafe after 5 or at most 7 Years after the first Attacks. In Italy a Gout Powder was famous a long Time under the Name of the Pulvis Principis Mirandola the Composition of which was very analogous to that of the Duke of Portland's Powder. It was observed that almost all who used the Duke of Portland's Powder in England tho' they were freed from the painful Appearance of the Gout in the Extremeties, were afflicted with more fatal Disorders than the Gout. Many died Apoplectic as did the Duke of Portland himself a few Years after he had been freed from the Pain of the Gout. Dr Fuller observes that the same Thing happened to 12 Gentlemen who were all that used it in Scotland. Dr Gaubius observed similar Effects in those Persons who used it in Holland. Celius Aurelianus observes that those Persons who in his Time used the Bitter Electuary for the Cure of the Gout were generally seized with Lethargy, Stupor & Apoplexy or Pluresies & Peripneumonies. By the Use of Bitters the Tone of the Stomach is destroyed & it's Energy as if it was rendered incapable of throwing the Gout upon the Extremeties & thus it falls upon other Parts as the Brain, Lungs & Bowells. This likewise

A Person some Time ago appeared in England who undertook to cure the Gout radically. The Terms were that the Doctor should receive 300 Guineas one Half of which was to be paid at the Begining of the Course & the other Half at the Expiration of a Year at which Time the Course was to be completed. Amongst others the late Marquis of Granby put himself under his Care but before the Expiration of the Time appointed the Marquis died Apoplectic. From this Circumstance and from the Length of Time necessary to perfect a Cure it is probable his Medicine resembled the Duke of Portlands Powder.

The natural & salutary Appearance of the Gout is in the Extremities in a Topical Swelling & Inflamation. Nothing therefore should be attempted to remove this unless it could at the same Time intirely eradicate the Disorder. This is not to be done by Medicine. Something of the Kind may be done by a proper Use of Exercise & strict Regimen, as a Milk Diet.

This may sometimes cure the Disorder, but it ought only to be attempted on young Persons & those of a strong & healthy Constitution. Persons advanced in Years are generally too low & weak to bear this Diet—

The Proximate Cause of this Disorder has been long inquired after— Many Opinions have been formed concerning it but none are sufficient for they will not account for all the Phaenomena which occur. The most probable is that it is seated in the Nervous System, for, were it situated in the Simple Solids or Fluids it could not escape the accurate Inquiries made after it. This is also supported by the Disease being brought on by such Things as affect the Nervous System. The Substance which particularly occasions it remains as yet concealed & probably ever will. This is further confirmed from the quick Transition of the Gout from one Part to another. The following Case is so remarkable that I will give it you as it is related in the first Volume of the London Medical Observations.

"Mr. Major Rooke, Surgeon & Apothecary in upper Shadwell of about 42 Years of Age, a sober temperate Man accustomed to no Disease but the Gout— the Returns of which had never been more frequent than once in 12 or 14 Months. About the Month of June 1755 he was seized with a very severe Paroxysm of the Gout. As I had known some extraordinary Effects produced by a Vegetable Diet in that Distemper, particularly in one Gentleman who by a total Abstinence from all Kinds of Animal Food except Cows Milk and that without Bread had cured himself of this Disease & who at the Time I mentioned this Case to my Friend was in the 13th Year of his Milk Diet. I persuaded Mr. Rooke to try what Vegetables would do for him— he

he readily complied & entered immediately upon it with a Resolution that if it answered his Expectations he would renounce Flesh & Fish forever. But after the most religious Abstinence from Animal Food of every Kind for 11 Weeks, being visited by a gentle Attack in both Feet he returned immediately to his Animal Food. This Paroxysm continued but 48 Hours, but in March 1753. was succeeded by a very severe one in both Feet. The Pain in his Feet Heels & Ancles increased with great Violence for about 10 or 12 Days till at length he was in the most extreme Agonies such as he had never felt before & such as almost made him mad. In the Height of this Extremity (to use his own Expression) the Pains in the Feet Heels & Ancles flew as quick as lightning to the Calves of his Legs but remaining there not Half a Minute & not in the least abating of their extreme Violence, tho the Feet &c. were left intirely free from Pain, they afcended with the same Velocity as before to both the Thighs, at the same Time leaving the Calves of the Legs free; from thence in less than a Minute & as quick as before they arrived at the Abdomen & after giving the Patient one most severe Switch in the Bowells they reached the Stomach - Here the Pains & here the Fit ended upon the Patient's Vomiting up about a Pint & an Half of a green aqueous Liquor but so extremely corrosive that he compared it to the strongest Mineral Acid. This extraordinary Crisis happened at about 2 o'Clock in the Morning. Immediately after this Discharge he fell asleep & slept till 7. or 8 & awakened perfectly easy in every Part, no Signs of the Distemper

remaining, but the Swelling & Tenderness of the Feet, both of which went off gradually, so that in 2 Days he was able to walk about his Business.

The next Fit seized him in February 1754 in the common Way but was less violent than the former & continued about 6 Weeks - during which Time he had three increased Paroxysms or distinguished smart Fits which held him about 2 Hours each in the last of which he had the same Critical Discharge of the same corrosive Matter preceded by the same uncommon Symptoms as in the Fit of 1753. But mending every Hour he was able the very next Day to walk & attend his Patients with more Ease than after the first Fit for the Swelling abated much sooner & in 3 Days disappeared. I have said that this last Fit was attended with 3 distinct Paroxysms the last of which ended as above, yet to show the disposition of Nature in this Case to throw off the offending Matter in this her new Way, it is remarkable that in the two first of these increased Paroxysms of Pain the Patient declared to me that he never had the least Ease till he had vomited, but as there was no Translation of Pain before these Vomitings there was none of that corrosive Matter to be discharged: Nothing but the common Contents of the Stomach was to be seen. These Vomitings procured the Patient some Ease but the Fit of the Gout went on till the 3d Paroxysm was over which ended in the Manner related. — As the Crisis in this Case is uncommon I must take Notice of a Symptom or two which were no less extraordinary in both these Fits of y.e Gout.

A most profuse Sweat attended the Patient every Morning during the whole Course of the Fits which was so very offensive at the same Time his Breath soun common only stinking that neither the Patient himself nor those who waited on him were ever sensible of the like. His Linnen was tinged as if with Saffron & his Urine very high colored almost as deep a Red as Claret, but upon the Critical Vomitings every one of these Symptoms disappeared with the Disease.

On the 9th of December 1755. he was again attacked in one Foot the Symptoms however were so very mild that he took no Notice of them to his Family till the 12th; from that Day the Pain was aggravated and the Swelling greatly increased by Walking & Riding in a Coach. On the 17th it became extremely violent particularly in the Nell when it instantaneously left the Parts affected in the same Manner & with equal Velocity as in the two former Fits, it flew to the Calves of the Legs, Thighs & Abdomen & when it reached the Stomach it caused him to vomit the same Kind of corrosive Acid as in the former Fits & tho' the Quantity was no more than a Teaspoonful he became perfectly well in two Days.

The same Symptoms of fetid Urine & offensive Sweats attended the Patient in this short Paroxysm as in those of 1753 & 1754 The Sweat continued but two Nights & the Urine fetid only 48 Hours. As Mr. Rook had experienced so great & happy Effects from the former Critical Vomitings he was greatly disappointed upon finding so small a Quantity evacuated - for which Reason he immediately attempted to increase it by drinking

three Pints of warm Water, which was at Hand, but in Vain
for neither that nor the Use of her Finger could provoke to
any Evacuation which was begun & ended by Nature;
for tho' this Quantity was so very small, yet as it was so very
corrosive & produced the same Effect, the Discharge must be
accounted as truly Critical as the others were. During the
first of these Fits in the Year 1752. a hard Tumor had ap-
peared on the Side of the Metatarsus near the Middle of the
right Foot which continued until after the third Vomiting
when it was resolved & disappeared totally upon the
Discharge of a viscid Matter like the White of an Egg;
with a few small Chalk Stones from the End of the middle
Toe of the same Foot. This Discharge happened about 4 or 5
Days before the Patient was seized with a regular Fit
in 1755 in April. But it is to be remarked that this
last Fit continued 3 or 4 Weeks & went off in the common
Way without any of the Critical Discharges of Vomiting
Urine or Sweat; but left on one Hand three on the other
two Fingers loaded with Chalk Stones, with this peculiar
Symptom that when the Weather was cold those Fingers
were affected with a most exquisite Pain which was
always removed by Heat. But not long after this
last Fit a large Quantity of Chalk Stones were extracted
from the Bottom of the left Foot near the Ball of the great
Toe & that from Time to Time for about 3 or 4 Months.
On the 19th Jan.y 1756. the Wound occasioned by the
Chalk Stone being still open, he was seized with a Fever
and a Fit of the Gout came on with the Common Symptoms
in both Feet which continued with Violence for about
a Week with frequent Reaching & Vomiting but
without bringing up more than the common Contents of
the Stomach. At this Time an uncommon Sinking

in the Bottom of the great Toe from where the Chalk Stones had been extracted tormented the Patient for 5 or 6 Hours. Upon his frequently rubbing the Part he was very sensible of a Fluctuation of some Matter which soon appeared to flow at first in small Quantities from the open Orifice in the Ball of the Toe. Upon prising the Part about a Tea Cup full of a liquid Chalky Matter was collated. The next Morning the Patient made a large Opening with an Imposthume Knife which produced more than Half a Pint of serous bloody Matter full of Chalk Stones which proved as truly Critical as the Vomiting of the corrosive acid Matter did in the Case above mentioned for the Orifice from which the Chalk Stones first issued was very soon healed & the Gentleman continues in perfect Health."

I must here make some Observations resulting from the forementioned Case.

From the Pain travelling so quick it plainly appears that the Gout is a Nervous Affection: for if it were carried on by Means of the Circulation it would not have moved so fast. As the Vomiting of the Acid was produced immediately when the Gout arrived at the Stomach, this State of the Fluids must have been instantaneously produced. This Acid could not be the Cause of the Disorder as we find several Paroxysms went off without this Effect being produced.

Another Gout Doctor has lately made his Appearance in England & Ireland with surprising Success. As his Patients are upon putting themselves

under his Care obliged to take an Oath never to disclose the Method he takes we are unable to discover the Means employ'd. This much he permits them to relate that the Cure is not owing to any Medicine taken internally or externally applied. It probably is produced by Regimen & Exercise & that perhaps applied in a particular Manner.

The next Substances we are to consider are Dandelion, Endive, Lettuce & Succory.

These have been constantly supposed to be of a cooling Nature probabably for no other Reason than from our employing them a Sallads. They have been recommended for resolving Obstructions of the Liver & other Viscera of the Abdomen. Boerhaave, Vanswieten and others say they have employed the expressed Juice of Succory & Dandelion in these Cases with good Effects. The Succory & Dandelion are possessed of similar Virtues. To produce their Effects properly they should be taken in large Quantities & their use should be persevered in for a long Time. I have relieved several Persons by ordering them to take a Coffee Cup full of the expressed Juice of the Dandelion 2 or 3 Times a Day.

Lecture 19th.

Indian Turnip in its recent State is very acrid and when taken in large Quantities it is even said to prove deleterious. Stoerlin gives a case of a Vomiting of Blood produced by it. D. Storck tells us of a Boy afflicted with a violent Cardialgia from eating it of which he died. Vinegar is said to be the best Antidote when it has been taken & that it will even destroy its Acrimony. It loses its Acrimony by drying & boiling or roasting & is then employed as Food by the Natives of this extensive Continent. When taken in a moderate Quantity it stimulates the Stomach excites Appetite & promotes Digestion & proves serviceable when the Peristaltic Motion is inert & languid. On Account of its Diuretic Virtues it is employed in Dropsies & on Account of its Pectoral Virtues in the Asthma Pituitosum. It is likewise employed in Paralytic Affection both internally & externally. It is sometimes employed in Intermittents when fresh from Gr. +. to Gr. ++. in Pills at a Dose. Its Virtues only when fresh.

Masterwort affords a good Masticatory for the Rheumatic Toothach. Hoffman tells us he employed it in Paralytic Affections. This Root powdered is said by Country People in Europe to cure Intermittents. Mixed with Hog's Lard it will cure Ringworms. It is a very acrid Stimulus & may be employed wherever such are required. all -

All the Kinds of Orris are very acrid. The Acrimony resides principally in the Root. The Florentine Orris is a very strong Errhine, not only causing sneezing when taken into the Nose but also Inflamation of the Nose & Head. Internally taken it proves a very strong Cathartic & is used as an Hydragogue. On this Account it is recommended in the Edinburg Medical Essays, in the Dropsy & was used with Success. The Root is to be macerated in cold Water which the Patient is to use for common Drink. For this Purpose our common Water Flag answers very well. This Mr. Coldenden tells us he has found to be a very strong Cathartic & Diuretic —

Wine is a powerful Stimulant. The too liberal use of it as of all other Stimulants is hurtful by enervating the System & disposing to the Stone & Gout &c. If used moderately it excites the Action of the Stomach raises the Spirits & banishes Sorrow & Care. But after the use of it the Person finds himself relaxed & debilitated and feels all the Inconveniences of real Disorder in Proportion as his Spirits were before elevated by its use. I am not however here to treat of its Use as a Part of Diet but am to consider its Virtues as a Medicine. Properly administered it may prove an excellent Remedy in many Diseases. It is useful in all Cases of Weakness and Langour. Also in Indigestion & Weakness of the Stomach & particularly in the Hypochondreal Disease. It assist Digestion by exciting the Stomach into Action upon its Contents; & this we find that Nothing more speedily relieves the Oppression arising from a full Meal than

a Glass or two of generous Wine taken after it. Dr Cadogan thinks Wine ought not to be taken with Animal Food as it has the Property of hardening Animal Substances thendering them firm, resisting Putrefaction; but it by no means follows that it has this Effect in the Body. It is an excellent Medicine and Cordial where the Strength has been exhausted by Chronic Diseases. It is also excellent in some Fevers—

Fevers are divided into 2 Kinds—

1st. Those that are attended with Languor & Debility & where the Action of the Heart & Arteries is too weak & low for the Purposes of Life.

2d. The Inflamatory where the Action of the Heart & Arteries is too vigorous & exceeds the Standard of Health.

Under the former we comprehend all the Nervous Malignant & Putrid Fevers. Here Wine is an excellent Remedy as it resists Putrefaction, excites the too languid Motion of the Heart & Arteries & increases the Strength of the Patient. Claret is particularly serviceable in those Cases. Where Miliary Eruptions appear, Wine properly administered so as not to heat the Body is one of the best Medicines we can employ. It is also highly useful to take off the Restlessness attending those Diseases & for this Purpose it is particularly recommended by Dr. Gilchrist. A Delirium & Redness of the Eyes are no uncommon Symptoms in Nervous Fevers. These are occasioned by a weakened Circulation. Wine therefore by increasing the Circulation will be of Service in these Cases. The best Method to know when Wine will prove serviceable is to know whether the Heat & Delirium are increased. If they are it is to be con-

tinued

no longer. Wine is also very useful in the last Stage of an Inflam-
atory Fever in which the Patient is generally weak. In the
Beginning of Inflamatory Fevers the use of Wine is impro-
per on Account of its increasing the Action of the Heart &
Arteries which is already too vigorous. Wine is also employd
with Advantage in the Small Pox. Here it acts much in
the same Manner as the Bark. With Regard to the Quantity
little will generally be sufficient, but such Persons as have
been used to a large Quantity in common must take
more of it than a Person who uses sparingly or perhaps
none at all in common Diet. Dr Whyte used to tell us of
a Case of an Officer laboring under a Malignant Small-
Pox who took seven Bottles of Claret a Day & nearly this
cured of his Disorder. The Wine should generally be given in
a weak Negus or in a diluted Form. Both by supporting
the Vis Vitæ has an Antiphlogistic & Antiseptic. Burgundy
Claret & Rhenish Wines are the best Antiseptics. The heat-
ing Wines as Madeira, Port, Sherry &c. are the Best Pre-
servatives against Contagious & Epidemic Fevers. Of the
Usefulness of Wine in Contagious Disorders there was a
remarkable Instance during the Plague at Marseilles
when all the Physicians of that Place being dead it became
necessary to order a fresh Supply from Paris. Their thinking
Fear was the Cause of Contagion determined to keep
themselves always gay & chearful with Wine. This they
did & by these Means preserved themselves & as many others
as they could prevail on to pursue the same Method. Their
Preservation however depended more on the Anti-
Septic Virtues of the Wine than their high Spirits.

Malt Liquors are more nutritious, acescent, more laxative & flatulent than Wine. They are very proper for the Cure of & Preservation from the Scurvy. When there is Debility of the Organs of Degestion they are extremely hurtful causing Flatulencies, Spasms & the whole train of Evils attending Indigestion & acescent Fermentation in the Stomach.

Animal Stimulants. These are but few as Animals are made up of mild bland Substances & are themselves of a mild Nature. Some of the secerned Fluids are however of an acrid Natur, but these shall be mentioned under the Head of Evacuants. The most powerful of the Animal Stimulants are the—

Canthorides. These are commonly employed in external Applications. From their Acrimony they stimulate & inflame the Skin & in Consequence of this raise Blisters. I shall here only treat of their Operation and Use when taken internally. The Antients & Hippocrates supposed the Acrimony to be lodged in the Head, Wings & Feet & accordingly deprived them of these that they might be given with more Safety. But this is a wrong Notion as the Acrimony is found to be lodged in one Part as well as another. Canthardes were employed for internal Purposes before they were used externally tho' by many they were considered as dangerous & improper for our Frame. Hippocrates employed them in Hydropic Cases & as a Pepary to promote the Menstrual Discharge. They are found to have a particular Tendency to the Urinary Passages

and even occasion a Discharge of Blood from these Parts with great Inflamation. Dr. Grainger in the Edinb: Med: Essays recommends a combination of Canthariden & Alkaline Salts in the Dropsy. He likewise recommends them in inveterate Gleets. Groenveldt employed them in Ulcers of the Kedneys and Bladder; in the Gout & in Calculous Concretions of the Kidneys. He always combined Camphor with them. In large Doses they are very hurtful & will even prove fatal by exciting a violent Inflamation in the Oesophagus, Stomach & Intestines. They will also occasion bloody Urine, Strangury & Erection of the Penis. Forestus gives us a case of a Person who from taking a large Dose of Canthariden with a View of exciting the Venereal Appetite, had a continual Erection of the Penis, a Swelling of the Scrotum & a Discharge of Blood which destroyed the Patient on the 11th Day. In moderate Doses they do not affect the Stomach & Intestines but stimulate the Urinary Passages only. This seems to be owing to their being kept in a diffused State before they arrive in the Urinary Passages, where, from their Connection with a particular Part of the Blood they act in a manner dry contracted & thus can act more powerfully. This seems to be confirmed from their not always affecting the Kidneys when given in a dilute form whereas if in Substance will sometimes produce a Strangury. Between in Substance they do not always prove Diuretic & when they have this Effect it is more by Chance than Design. In Nephritic Cases they must be hurtful on Account of the Inflamation they excite. They are said to be useful sometimes in stopping Gleets & the Fluor Albus which they do by exciting

an Inflamation in the Parts, least their Effects here are doubtful as we cannot determine the Degree of Inflamation. On Account of their Diaphoretic Qualities they have been supposed Diuretic & hence they have been recommended by Dr. Mead in the Leprosy. I can expect no great Effect from them in this Case. They have also been supposed Expectorant and therefore have been employed by Barton & Lettsom in the Chincough. Barton always combined Bark, Castor & Opium with them to prevent their bad Effects which were certainly of more Service than the Lanthardes. They are at best a precarious & in many Cases a dangerous Remedy & indeed they should never be used when we can get any other Remedy to answer the Purpose. —

Millepedes have been employed for various disorders. Dioscorides employed them as Diuretics in the Dropsy & in Obstructions of the Viscera, Jaundice &c. Boyle says that the Use of them will sharpen & clear the Eyesight & will remove the first Symptoms of Cataract. They have been recommended in Suppressions of Urine & in Constriction of the Kidneys owing to Calculous Concretions where they are supposed even to dissolve the Stone. Their Intrals contain a Stimulus of the same undetermined Nature as the Lanthardes to which however they are much inferior in Power. I have seen them exhibited in Chlorosis & Scrophula without any considerable Effect. They are given in Substance from ℈ss. to ℥ij. in a Dose or the expressed Juice of 50 or 60 Animals is swallowed in a Glass of Wine. In long Nervous Fevers their good Effects are certainly only those arising from the Wine in which they are given. —

Cochineal posesses no great Effects as a Medicine, its only use being to give an agreeable Color to our Formulæ.

Vipers have been employed for the Cure of many Disorders and our Rattle Snake for the same. They deserve no Preference to any other Stimulant. The Fat is an Ingredient in Sir Hans Solane's Ointment - any other Oil will answer full as well.

Now proceed to the general Characters.

Nutrientia as Stimulants. Whatever increases Strength to the Solids increase their Oscillations & as increasing the Quantity of Fluids increase their Tension. They are therefore by their Action on the Stomach necessary in Hypochondriac, Hysterics & Arthritic Complaints where the Action of the System is diminished. Where there is too great Action of the Heart & Arteries as in Inflamation they are hurtful.

Astringents as Stimulants. I have in a former Lecture explained the Action of these as Tonics, not so much by inducing Contraction but by increasing the Firmness & Tension of the Parts. This will give a briskier Action to the Vessels in the Propulsion of the Fluids, in removing Resistances in their Way & in resolveing Obstructions.

Sedatives as Stimulants. These are generally in their first Operation Stimulant.

Acids. Tho' the Effects of these are Sedative yet they are very probably Stimulant in their first Operation.

Alkalies are in every Respect Stimulant but are not to be considered in that View alone. —

Neutral Salts are both Sedative & Stimulant. Let me here repeat a caution — Never be too free in the Use of Stimulants lest they should become habitual to the System & at length destroy the Tone of the Fibres of the whole System & of the Stomach in particular —

We shall in our next Lecture treat of the Cold Bath, which tho' different from all other Stimulants may properly enough be brought in under this Head.

Lecture 20th.

The Cold Bath

Seems to have been used in Time coeval with Man. The earliest Accounts we have of it are contained in the Writings of Homer & in the Scriptures. We learn from Virgil & Claudian that it was a common Practice with the ancient Italians and Germans to plunge their Children as soon as born into the cold Water of their Rivers. This Practice still prevails amongst some of the Northern Nations of Europe. The Russians and Finlanders after heating themselves in their Stove Rooms will plunge naked into the Snow & entirely cover their Bodies with it to render them hardy. Thus far the Use of the Cold Bath was practised only by Persons in Health solely to vigorate the Body. The Use of it in Medicine was not known until the Time of Hippocrates who first properly distinguished the warm & cold Bath & laid down some Difference between salt & fresh Waters. The Romans who received not only their Manners & Laws but also Medicine from the Greeks, received with it the Use of the Cold Bath. It was not however brought into general Use until Antonius Musa, at that Time the first Physician in Rome, cured the Emperor Augustus by the Use of the Cold Bath, after he had tried the warm Bath and other Remedies without Effect, of a long tedious Illness, which by the Symptoms delivered us by Suetonius appear to have been of the Hypochondriac Kind. For this Service Antonius Musa was raised to the Equestrian Dignity, had a golden Ring

just on his Finger, received considerable Presents of Money from the Senate & People of Rome & besides a Statue was erected to his Memory & he obtained for all the Physicians an Exemption from paying Tribute. From this is derived the Practice which obtains in many Universities of putting a golden Ring upon the Finger of every Person who receives a Doctor's Degree in Medicine; and to this Day in some Countries Physicians are exempted from paying Taxes & from all Military Duty.

After this Time the use of the Cold Bath became general at Rome & the Warm Bath which was formerly much employed was totally neglected. Vide Horatii Epist: 15 Lib: 1. All Writers both ancient & Modern Aretaeus Capadox, Strabo, Cornl: Celsus & more particularly Charmis who floarished at the Time of Nero as mentioned by Pliny to whom we may add Seneca & Modern have been full in the Commendation of this Remedy.

I shall consider the Cold Bath under three Heads— What Waters are employed— What Choice is to be made— In what Manner & how long it is to be applied.

Many prefer Salt Water to fresh, the Reason of which is not very obvious. The only one that can be assigned is that the Salt will fix on the Skin & stimulate more strongly. Salt Water too may more effectually wash off the Mucus from the Skin than fresh. That Salt does fix on the Skin appears from this, that the Skin of Children who are frequently dipped in Sea-Water is Salt to the Taste. Dr Russel in his Treatise de Tabe Glandulari informs us, that after his Scrophulous Patients had bathed in the Sea for some Time

he was obliged to let them desist for some Time until the ulcers were healed up.

When we want Water merely for it's Coldness, Spring & Pump Waters are to be preferred as they are always colder than Sea Water. When we want a continued Stimulus applied Salt Water is to be preferred & in this Case it must be suffered to dry on the Skin.

There are two Methods of applying the Cold Bath — 1st When the Person jumps into the Water — 2dly The Shower Bath, when the Water is raised to a certain Height & let fall upon the Person. There is no great Difference in the Effects of these two Methods, except that in the latter by raising or lowering the Machine we may increase or diminish the Force of Percussion at Pleasure or may add Salt when we please.

The Skin has such a Sympathy with all the other Parts of the Body, that when ever it is disagreeably or agreeably affected the other Parts are also. The Human Body is disagreeably affected upon the Application of cold Water if sudden, the Vessels upon its Surface are constricted and the Blood is driven to the internal Parts. Hence the external Parts appear pale, the Breathing becomes difficult & deep, the Blood stimulates the Heart & Arteries & the Circulation over the whole Body is increased. Hence the Cold & Shivering which were produced by the Cold Bath are succeeded by a Glow of Heat — the Pulse becomes full & frequent; the Mind is rendered serene and cheerful and if the Application of this Remedy is continued for a sufficient Length of Time the Muscles are made firm & hard & all the Functions of the Body are

performed in a better Manner than before & the Person is indeed much less liable to Colds Complaints arising from sudden Changes of Weather. We should not remain too long in the Water at a Time for in this Case Nature will not be able to overcome the Shock & there is Danger of some of the Vessels in the internal Parts being broken. We may know that the Application has continued long enough to succeed if immediately after coming out the Body is suffused with a Glow of Heat & Redness. A proper State of the Body is necessary that the Cold Bath may produce its Effects. It will be more useful if the Person is not cold when he enters. ——

We are in the next Place to explain how the Cold-Bath produces its Effects & in Order to do this properly we must make some Observations on the Nature of our Body

The Human Body is divided by Pathologists into three Parts — The Simple Solids — The Fluids — & the Living Solids or Moving Fibres. It is necessary therefore that the Cold Bath should act upon these or upon some one of them.

1st. Of the Action of the Cold Bath on the Simple Solids.

The prevailing Opinion is that the Cold Bath acts upon the Human Frame in the same Manner as the Cold acts upon inanimate Bodies, by constringeing or condensing & thus increasing the Firmness or Cohesion of the Simple Fibres. But Cold externally applied cannot operate to the internal Parts which retain their natural Heat; tho' the Surface of the Skin may be somewhat constricted & as it does not retain its Heat may be condensed —

2.dly

2dly With Regard to the Fluids the Cold cannot Affect them in any other Manner than in so far as it affects the Vessels upon the Skin by producing a Constriction of them. But this Effect is owing intirely to their Sensibility therefore the Action of the Cold Bath is upon the Solida Viva or Moving Fibres.

I shall now endeavor to explain how the Cold Bath acts upon the Moving Fibres.

That the Animal Functions may be performed in a proper Manner there is necessarily required a proper Tension or Tone of the Parts; for too great Laxity or Rigidity are equally injurious. Before I proceed to shew the Action of the Cold Bath on the Moving Fibres I shall make a few Observations on this Tension & from it shall endeavor to explain some Phenomena in our System.

In the Muscular System the Fibres are kept Tense by the Weight of the Parts, by the Antagonist Muscles & by the Parts which they surround. The Fullness of the Blood Vessels contributes also to this Tension of the Muscles for we observe that Muscles become relaxed from profuse Hæmorrhages by which the Vessels are emptied suddenly. Therefore the Muscular System is not only in itself Tense but also owes part of its Tension to the Sanguiferous System.

In the Vascular System there is also Tension & the Arteries are found Tense not only in the Systole but also in the Diastole of the Heart; for even after Death when the Action of the Heart ceases the Arteries are contracted sufficiently to propell the Blood. From this Tension the different Effects of Bloodletting can be more readily explained than from the Doctrine of Derivation & Revulsion; for it is evident that from the least

change of this Tension very evident Effects must be produced in our System. In Cases of violent Spasm Bleeding relieves by the Relaxation it produces. The Antients used to bleed intill Fainting was ocasioned in Inflamations of the Intestines etc. The good Effects in this Case are owing to the universal Relaxation induced by which the Obstruction which causes the Inflamation is taken off. But neither the extending Power of the Fibres or the distending Power of the Sanguiferous System sufficiently account for the Distension of our Frame. To this we must add the natural Contractility which is partly to be referred to the Elasticity of the Fibres but principally to the Influx of the Nervous Power. This Contractility obtains only in the living Body decays after Death. The Tension of the Body is in exact Proportion to the Nervous Influx. This primary Cause of Tension varies considerably so that Tension depends on extending & distending Powers & upon the Tonic Power or Contractility of the System.

There are some Parts of the Body in which the extending Power has no Influence or if any it is very different from that which it exerts in other Parts. An Instance of this we have in the Stomach & Intestinal Canal to which there is no Antagonist Muscle or any Counterbalance. The Tension therefore in this Case depends upon the Contractility & Tonic Power & also in some Measure upon the Distension of the Blood Vessels This Part therefore is more subject to Variation than any Part of the Body. The State of Tension in the Alimentary Canal has a considerable Influence

upon the Tension of the rest of the System. Thus if the Stomach has been accustomed to take any Stimulus which increases its Tone, at a certain Hour when that Stimulus is denied the Stomach is relaxed & this Relaxation is communicated to the whole System, e.g. if a Person has been used to take a Dram at a certain Time, when that Time returns he feels a Weakness over the whole Body. The Palpitation of the Heart shows the Sanguiferous System to be affected & the Tremor shows the Muscles to be in like Manner affected. As soon as the Dram is swallowed all these Symptoms vanish & the System recovers its Tension. This Debility or Absence of Tension is produced also when a Person is denied his Food at the usual Time. In the same Manner if the Alimentary Canal is distended with a small Quantity of Air the whole Body is considerably affected. as soon as the Air is expelled it recovers its former State.

But as the Stomach has a great Influence upon the rest of the Body & produces various Affections so on the other Hand the Stomach is variously affected by the Affections of different Parts of the Body, but more especially by Affections of the Surface or Skin, as this, the largest Organ of Sense, is furnished with a great Number of Nerves which are easily irritated. Sanctorious observes how much the State of the Mind & of the internal Functions are influenced by the State of the Superficies. There is no Part of the Body but what may be affected in various Manners by this Tension

and there are many Appearances which can be explained only upon this Principle. Dr Wyatt in his excellent Book on Nervous Disorders has a Case of a convulsive Cough which was brought on by the least Change in the Position of the Body or even by dipping the Hands or Feet in cold Water. This can scarcely be explained except from the Change of Tension produced. A Blister applied upon any Part of the Body will in a short Time affect the whole System with its Stimulus. Is it not probable that this is produced by the Increase of Tension?

We often see Men in Anger who at other Times are weak perform Herculanean Feats. This is scarcely explicable unless we suppose the Nervous Influx increases the Tension. A Person makes a full Inspiration when he endeavors to lift any Thing by which the Muscles are rendered tense & their Force is increased. Terror suddenly relaxes the Body & causes a Person to lose his Strength tho' ever so strong at another Time, as if by Charm.

It is commonly believed that warm Bathing of the Feet produces its Effects by Derivation, but its Action can be much better explained if we suppose that it consists in taking off Tension & relaxing the Part to which it is applied, which Relaxation is from thence communicated to the rest of the System. We may therefore readily suppose that the Cold Bath acts by increasing the Tension for we know that Heat & Cold produce opposite Effects.

We may hence conclude that there is necessarily a Tension belonging to the Body & when this errs either on the Side of Rigidity or Laxity the Body is more or less in a diseased State.

The Cold Bath is more particularly serviceable in Diseases arising from Laxity. By this the Sensibility & Irritability of the Body is increased. Women & Children whose Bodies are very lax have a very Irritable Nervous System - they are therefore more subject to the Disorders called Nervous from which the more robust remain free. The Baron Van Swieten relates the case of a young Lady who from a particular Delicacy of the Nervous System was thrown into Convulsions from any Irritation. She was ordered to have her Legs Thighs & Abdomen kept tight with Bandages & was cured by this Means. We seldom see strong Men Hysteric or Epileptic unless they have been affected with these Disorders in their Infancy. Medicines which take off this Irritability cure the Disease. The Bellies of Muscles are more sensible than the Tendons because they are more lax - The Intestines than the Coats of the Arteries.

From what has been said it will appear how the Cold Bath acts on the Solida Viva, namely, by producing a proper Degree of Tension which it seems to do by promoting an equable & just Influx of the Nervous Power. An Example will render this plain. In a ~~Deliquis~~ Deliquis Animi or Fainting where there appears to be universal Relaxation the Nervous Influx into the Vital Organs is stopped whence the whole Body is affected; upon sprinkling a little cold Water upon the Face or upon

applying any other Stimuli the Nerves are excited into action and the Patient is generally recovered. We can hence perceive why the Cold Bath has at all Times obtained great Praise in the Cure of those Disorders which are commonly called Nervous.

We shall next consider in what Disorders it is to be employed & in what rejected.

In the Hysteria, Epilepsy & other Disorders of this kind where there is great Debility the Cold Bath produces the most happy Effects. Mobility or Irritability of the Nervous System are the most frequent Predisposing Causes to these Disorders which are produced by the slightest occasional Causes. The use of the Cold Bath in Hysteria may be inferred from this; that this Disorder more frequently occurs in Warm than Cold Climates & Women affected with it always find themselves better in Winter than in Summer. The Hypochondriasis a Disease so frequently confounded with Hysteria is rather a Disease of Cold than Warm Climates & where it occurs the Habit inclines to Rigidity. On this Account the Cold Bath seldom proves useful in this Disorder unless in the single Cases where these Diseases are complicated.

Children are very subject to Epilepsy especially if their Habit of Body inclines to Laxity; the use of the Cold Bath is therefore very proper for them.

Palsy seems to arise from the improper Influx of the Nervous Power into the Muscles of the Part affected. The Cause of this it is very difficult to explain. Whatever will restore this Influx will remove the Disease. The illustrious Van Swieten has Instances of Persons afflicted with the Palsy being cured by Intermittents coming on. As the Effects of Cold Bathing very much resemble the Paroxysm of an Intermittent, it bids fair to be of Service in this Case. Dr. Baynard in the Appendix to Sir John Floyers Treatise on Cold Bathing gives a very pretty Instance of its Usefulness in this Complaint. This Case was related to him by Dr. Blair. A Boy of 13 was seized with a Paraplegia; various Medicines were employed for it in Vain until he got something better by the Use of the Cold Bath. By the Advice of Dr. Petcairne the Boy was plunged under a Fall of Water 12 or 13 Feet lightly repeatedly & by this he recovered his former Strength and Alacrity. LeDran has two Instances of Palsy being happily cured by Water falling from a Height on the Part affected.

Madness has frequently been cured by Cold Bathing, Instances of which occur in Van Helmont, Floyer and other Authors.

We shall go on with this Subject, Gentlemen, at our next Lecture. —

Lecture 21st.

Physicians are not yet agreed concerning the Proximate Cause of Intermittent Fevers. It appears most probably to be lodged in the Nervous System; for these Fevers are produced & removed by Affections of the Mind. They sometimes resemble the Apoplexy, Epilepsy, Convulsions & sometimes the Hysteric Disease. Storck gives us an Instance of a Man whom it seized in Form of an Amaurosis. Serlae mentions a Woman who was taken with Loquacity wherever the Fit come on.

Floyer & Bayald have Instances of Intermittents even of Quartans cured by the Cold Bath. Donald Monro tells us from Dr. Mason of an Intermittent Fever being completely cured by throwing the Person suddenly into a Pond. Huxham in his 1. Vol. of the Constitution of the Air Page 25 has these Words "Nec ponitendo utique Eventus, tunc Temporis, Balneum frigidum commendavi; praecipue Convalescentibus ab Intermittente rebelli: ad Fibrarum nempi Tonum restituendum & Humores lentos comminuendos. Hinc dubii tandem Quantum potest tale Remedium, ubi vix alia proficit Methodus, idque nonnunquam in pertinaci Quartana: novum hoc forsan & inauditum, mihi vero probé expertum".

This Remedy has been recommended in Ardent Fevers by Galen, Aetius & Alexander Trallianus. Nor are there Instances wanting in later Times of the Use of the Cold Bath in these Fevers. Thomas Willis has given us a curious Case. A strong young Woman labored under a Fever attended with a high Degree of Delirium After many Remedies had been tried to no Purpose he ordered her to be thrown into a River & kept there for a Quarter of an Hour. After taking her out she was put to Bed & a plentiful Sweat coming on she was cured.

John Gottl. De Hahn not De Haen who afterwards made a Figure at Vienna, in the 10th. Vol. of the Acta Physico-Medica describes an Epidemic which raged at Breslau in the Spring of 1737. against which Medicine had no Effect. He judiciously at length used the Cold Bath by which the Disease was happily cured. By-

By the Use of this Remedy Dr Hahn himself was cured of this Disease. John Sig: Dr Hahn Son of the former in Books written in the German Language on the Use of Cold Water, recommends the Use of Cold Bathing in Fevers; & if the Strength of the Patient will admit advises him to be plunged into the Water and that it should be applied in no other Manner.

Tissot in his Treatise on Bilious Fevers relates that he cured a Man whose Abdomen was much distended by cloths dipped in Cold Water externally applied.

The American Indians cure various Disorders by heating their Cabins & whilst in a Sweat throw themselves into a River. After coming out of the Water they go back to the Cabin where they sweat again & frequently recover; but as they employ this Practice promiscuously in every Fever & every Stage of Fever, it is no Wonder that it often proves fatal. We learn from Authors that the Antient Greeks & German employed the Cold Bath in the same Manner as our Indians.

The Chronic Headach is a Disease, to the Reproach of Physicians, often proves very tedious. This may be owing to various Causes Cold Bathing has for Ages been recommended in this Disorder & Celsus says "Nothing is more useful to the Head than cold Water". Baynard, Floyer & others give us Instances of the Efficacy of this Remedy in this Case. Dr Bergius gives us the Case of Person troubled for a long Time with a chronic Headach, who after Setons in the Neck & innumerable other Remedies had been employed to no Purpose

was perfectly cured by the Cold Bath. In the chronic Rheumatism the Cold Bath is very useful. We know that this is not confined to Joints but attacks different Parts, particularly the Head & Teeth. In these Cases the Cold Bath is serviceable as when the Disease is confined to the Joints often succeeds when all other Remedies have failed.—

The Cold Bath has been famous for the Cure of Arthritic Complaints from the Days of Hippocrates. Floyer and Baynard have Instances of Men who were lame with the Gout cured by the Use of this Remedy. Bartholine gives us an Instance of a Danish Count who cured himself of the Gout by putting his Feet in Cold Water and even Snow. This is a precarious Remedy during the Paroxysm as there is Danger of the Gout being repelled to the interior Parts & there producing many Evils but during the Intervals there is no Danger.—

There is a great Similarity between the Gout and the Gravel & they are to be treated upon the same Principles. Many have perceived the good Effects of Cold Bathing in Calculous Concretions. Mercurialis tells us that he was cured of the Stone in Kidneys by Bathing in the River Arno near Pisa. Borgieus relates the Case of a Lady of a Swedish Nobleman who for 20 Years had labored under a Stone in the Kidneys by which she was become very ill, for by the constant Irritation she had acquired great Mobility of the Nervous System. She had sometimes a Vomiting a constant Numbness with a violent Pain in the Small of the Back. These are Pathognomonic Signs of the Stone in the Kidney. For—

For seven years she used the Cold Bath & at the same Time drank cold Water by which Means all these Symptoms were removed and she afterwards lived for many Years in good Health. She discharged small Calculi in great Quantities in her Urine upon drinking the cold Water & constantly when she used the Cold Bath. Her Pain was increased for 6 Weeks after which Time they grew better & she remained tolerably well until the next Summer, for she used this Remedy only in Summer. A Laxity in the Kidneys appears often to be the Predisposing Cause of the Stone or at least this Laxity is very soon produced after the Generation of the Stone, which appears to happen in the following Manner. When a Particle of Sand is first deposited in the Kidneys it stimulates them to evacuate it by the Urine. This Irritation frequently repeated relaxes the Kidneys, whereby they can no longer cast off the Sand. Here therefore Cold Bathing will be of great Service, for it not only strengthens the Kidneys in common with the rest of the System, but gives them Tension, particularly from the Contrast between them and the Surface of the Body. Hence the Collection & Concretion of Sand in them is prevented & if any is already collected they are stimulated to expell it. If it does not produce this Effect, it will still be of Service by rendering the Body less Irritable —

An Inability of retaining the Urine may arise from various Causes. When it is owing to a Debility of the Sphincter Cold Bathing is the only Remedy & it has been recommended in this Case by Paulus Aginita. By retaining the Urine too long

the Bladder is over stretched & is not able to void the Urine. In this Case Cold Bathing is the best Remedy & the Bladder in this Case probably labors under a Paralytic Affection. In Nocturnal Pollutions which are commonly accompany the Hypochondriasis, Cold Bathing is much recommended by Tissot. An Involuntary Discharge of Semen arising from a Debility of the Vesiculæ Seminales is also stopped by this Remedy.

In a Discharge of Mucus from the Urethra, whether succeeding to a Gonorrhœa Virulenta or from any other Cause, the Cold Bath is the best Remedy. In this Case there appears to be a Debility of the Prostate & other Glands which secrete the Mucus. Hence we readily perceive the Use of the Cold Bath.

In Chronic Colics Cold Bathing is an excellent Remedy. Baynard gives us the Case of a Merchant who had been dreadfully excruciated with the Colic & was by this become exceedingly thin, but by the Use of this Remedy he recovered his former Health & Plumpness.

Stevenson in the Edinburgh Medical Essays gives Instances of the Utility of the Cold Bath in obstinate Costiveness after other Remedies had been employed to no Purpose.

Persons who use a great Load of Cloths & other Means by which the Body is kept too warm, are more obnoxious to Cold than others. Hence they are seized with more Diseases arising from Cold, as Catarrhs, Coughs, Ear-Aches, Tooth-Aches, Rheumatism Intermittent Fevers, Pleurisies & the like. To-

To obviate this Habit, to strengthen the Body & render it less
susceptible, no Medicine bids fairer than the Cold Bath.
Baynard tells us the Case of Dr. Cyprianus, who by too
great a Quantity of Clothing had rendered his Body so
sensible to Cold that he could not walk out even in
Summer without his Cloak; nor was he by the severest cares
kept free from Disorders. He was cured of this bad Prac-
tice by the Cold Bath. Borgius has a similar Case of
a Man who from his Infancy had been used to wear
a fur Cap, by which his Head became so tender that
he could not bear the least Blast of Wind tho' ever so
well covered with Cloths & suffered the greatest Incon-
veniences from this circumstance, but by the
use of the Cold Bath he got relieved from this bad Habit.

Cold Bathing is very serviceable to Children not
only to prevent but also to cure many of the Diseases
to which they are incident. Since the Time of Doctor
Harris it has generally been supposed, by Physicians
that the Diseases of Children were generally owing to
an Acidity in the Prima Viæ & were to be
cured by Magnesia &c. but this seems rather too gene-
ral, for by the use of Magnesia & other Absorbent we
may in a short Time remove all the Acidity, but
the Disease continues nevertheless. A Weakness of the
Stomach & Disease of the Chylopoietic Viscera will
we know generate Acidity, but this Acidity appears
to be rather the Effect than the Cause of the Disease &
hence the Cold Bath & the Bark are of more Effect
than all the Absorbent Powders we can give. To me
it appears probable that most of the Diseases of Children

are owing to a Laxity of the Solida Viva in general & of the Stomach in Particular & whatever will restore Strength and Tension to Life will most certainty contribute to the Cure of the Disease produced by Want of it —

In the Rickets the Debility of the Solida Viva renders the Vessels of the Periosteum & Cartilages unfit for depositing the bony Matter. Cold Bathing by strengthening the Body & giveing it Tone removes the cause & with it the Disease also & is indeed the only Remedy on w.ch we can rely.

Besides the Diseases above enumerated there are many others in which the Cold Bath may be used with Success.

We are next to mention those Cases in which Cold Bathing is attended with dubious Effects if not absolutely hurtful.

It was observed above that by giveing Tension to the Body it proved serviceable in Cases of Laxity, hence it will appear on the contrary that it will be attended with bad Consequences where Tension & Rigidity are already too great. Sydenham relates the Case of a Man who from too great Use of the Cold Bath had suffered many Inconveniencies which he was cured by Remedies which restored the proper Degree of Laxity to the Body.

In the Phthisis Pulmonalis a Disease very difficult of Cure the Cold Bath amongst various other Remedies has been exhibited & if we may believe Authors not without Success. But a priori we would suppose the Cold Bath to be a doubtful if not pernicious Remedy. not only in Consumption but Persons predisposed to it.

Consumption is frequently brought on by an Hemoptoe & in consumptive Persons there is always Danger of an Hemoptoe happening - hence therefore every Thing which drives the Blood to the Lungs must be injurious. Probably the Cold Bath has been thought useful in Consumptions from not paying a sufficient Attention to the Disease. I have read many Cases of Persons supposed to labor under Consumptions & who were cured by the Cold Bath, but I much doubt that they were consumptive. We know that Persons laboring under the Hypochondriack Hysterica always complain of their Breast & suppose themselves consumptive while almost all Persons who are really consumptive do not believe themselves so. There is indeed some Similarity between the two Diseases. There is an Oppression at the Breast often a Difficulty in Breathing with a slight Cough resembling that in Consumption often a slight Fever after Meals. To these may be added a Wasting of Flesh & some Degree of Lassity. In such a case the Cold-Bath is exhibited with the best Effects. In such a case the Physician as well as the Patient will suppose the Disease to have been a Consumption. In the Consumption I would not advise the use of the Cold Bath where any other Remedy can be applied. What has been said of Consumption will also apply to Hemoptoe & perhaps to every Hemorrhage. What I have hitherto said applies only to general Bathing. What are the Effects of cold Water applied only to the Breast are not sufficiently known.

It is hurtful in every Inflamation by increasing the Action of the Heart & Arteries & producing Obstruction. We may observe that Inflamatory -

Diseases more readily attack the robust & rigid than those of a weak Constitution & lax Habit. Cold Bath is therefore hurtful. We should be very careful how we recommend Cold Bathing to Plethoric Patients.

Cold Bathing was recommended by the Antients for Eruptions on the Skin but Experience does not confirm its Use.

Simmons in the Stockholm Transactions tells us that the Epilepsy is almost Endemic to the Inhabitants of Scania & Smolandia which he ascribes to the pernicious custom of washing the Heads of their Children affected with the Tinea with cold Water for by this he supposes the acrid Matter which should be expelled from the System is driven to the internal Parts. ——

Lecture 22d.

Of Sedatives.

These in Opposition to Stimulants are such Substances as diminish the Motions of the System & the Force of the Moving Power. Dr Cullen has so fully treated the Operation of this Class of Medicines that I intirely refer you to him. I shall only consider some of the particular Sedatives.

Many Substances may act as such & may probably differ in their Mode of Operation, but we are properly acquainted with only a few the principal of which is

Opium.

This is one of the most important Articles of the Materia Medica & deserves a particular Attention. It is undoubtedly a Medicine of considerable Efficacy & Power. We shall consider it as fully as the Nature of the Subject & our Plan will permit & endeavor to point out the Advantages & Disadvantages of its Use.

There have at all Times been very different Opinions concerning the Action & Effects of this Medicine & many ingenious Attempts have been made to ascertain the Effects & Mode of Operation of it & there are almost as many Opinions as Writers on the Subject. The Opinions of Physicians on this Head are so contradictory that we would almost be led to suppose that they wrote more to show their Ingenuity than to make any Addition to the Stock of Medical Knowledge. The Ancients ascribed not the Action of most of the Medicines to an Heating or cooling Quality. The greatest Part of them as Acts

Dioscorides, Galen &c. supposed that Opium acted by its Refrigerating Power. Plato, Widelius & others on the contrary ascribed its Effects to its heating Quality. Some have combined these two Opinions & suppose it acts both by heating and cooling - heating in its first & cooling in its second Operation. There have been considerable Disputes concerning the Part in which the Virtue resides. Hoffman Willis & others attribute its Soporific Virtues to a certain Sulphureous Principle. Petcairne & some others suppose them to reside in a Volatile Alkaline Salt. It is sufficient merely to mention these Opinions without shewing their Absurdity. Of more Consequence are the two following Questions -

1st. Upon what Part Opium principally exerts its Effects? Whether it acts first upon the Blood, rarefies it & increases its Bulk & by this distends the Vessels of the Brain & produces Compression thereby which the Nervous Influx into the different Parts is prevented? Or whether it directly acts upon & affects the Nerves only?

2d. Whether it excites the Action of the Heart & Arteries and increases the Animal Heat? Or whether the contrary?

With Regard to the first Opinion there have been many respectable Writers on both Sides. Many ingenious Arguments have been offered in Favor of the Action of Opium being upon the Blood. These are all summed up by Swallius in his Treatise on Opium. He allows that Opium may sometimes ~~act~~ primarily affect the Nerves but he supposes that it principally affects the Blood rarefying & increasing its Bulk.

If we consider the small Quantity of Opium taken at a Dose & that the smaller Part of this is active / for in Sauvman's Experiments it appears that in 20 ℔s of Opium not more than 3 iij. are possessd of any Vertues / we shall conclude that it cannot possibly have any Effect in rarefying & increasing the whole Mass of Blood which in the human Body is said to amount to between 25 & 30 ℔s. Dr Swieten observes that Opium is not easily soluble and remains for a long Time in the Stomach & says that it is no uncommon circumstance after a Patient has slept all Night upon taking Opium for the Pill to be thrown up next Morning undissolved. Here it certainly can have no Effect in rarefying the Humors & produces Effects intirely by acting on the internal Surface of the Stomach. These Arguments sufficiently refute the Notion of Opium acting by rarefying the Blood. But there are others if possible more strong & convincing. If one Grain of Opium will rarefy our Fluids to that an amazing Bulk would two or three Drachms increase them, which Quantity we know is often taken by the Turks in one Day! The Effect of Habit can be of no Service to the Favorers of this Opinion, for tho' Habit will lessen the Effects of any Medicine on the Moving Fibres yet we know that it can have no Influence on the Fluids. Haller supposes that Opium instead of thinning the Blood increases its Viscidity. But this Opinion is equally erronous and the same Objections may be made to it as to the other. The favorers of the former Opinion tell us that the Blood of the Turks slain in Battle is much thinner than that of Persons not accustomed to use

this Drug & they look upon this as an infallible Argument in favor of the Action of Opium on the Blood. But granting this fact to be true, tho' many Difficulties with Regard to this being the Case may occur, the Consequences which they endeavor to draw from it do not at all follow, for it by no Means proves that Opium Dissolves the Blood. All that we can justly infer from it is that Opium greatly debilitates the Organs of Chylification. It is likewise asserted that Opium when mixed with the Blood drawn from the Body renders it thinner & more fluid & of a shining red Hence they infer that the same takes Place in the Body. But this is certainly a very erroneous Method of reckoning. But the Experiments of Drs Whytt & Monro on Frogs place it beyond all Possibility of Doubt that the Action of Opium is upon the Brain & Nervous System. A Frog will live a considerable Time even Hop about after he has lost his Heart. After taking out the Heart of a Frog Dr Whytt injected a Solution of Opium into his Stomach & Guts. In less than Half an Hour he seemed quite dead & neither pricking tearing or cutting its Muscles caused any Contraction in them or any Motion in the Parts to which they belonged. Here the Opium certainly could not produce its Effects by mixing with the Circulation as this was destroyed by taking out the Heart. Dr Monro indeed observes that the Opium is sometimes absorbed by the Lymphatics and carried into the Mass of Blood. He further observes that when a Drop of the Solution arrived at the Heart it instantly became Paralytic. The Heart of a Frog will continue to beat sometimes after being taken out

Dr Whytt observed that upon immersing it in a Solution of Opium this Motion immediately ceased. Opium acts not only on the Nerves in general but also on those to which it is immediately applied. The different Humors may be affected by the Action of Opium upon the Organs of Sense & Motion & it is this that has given Rise to the Mistake.

We have now from Physiological Reasonings & from the Pathological Observations of Van Swieten & the Experiments of Whytt & Monro, shown that Opium does not act by rectifying the Blood but that it produces its Effects by acting on the Nervous System. The other Question is of more Importance viz.

Whether Opium excites the Action of the Heart & Arteries or the contrary?

Haller asserts that Opium always renders the Pulsation of the Heart & Arteries quicker & stronger. Haller likewise tells us that in small Quantities it always accelerates the Pulse & likewise that a Dog will not be killed by any Quantity of Opium that does not anger him. It has of late indeed been asserted that no Person can be killed by Opium. Whytt & others suppose that Opium diminishes the Action of the Heart lessens the Circulation except in Cases of Languor & Debility where the contrary Effect is found to take Place. If we allow that the Action of the Heart depends on its Sensibility & Irritability & of this we cannot entertain a Doubt we will from Theory conclude that Opium lessens its Action & that the Pulse will become slower upon giving Opium—

There is a great Similarity apparently between the Action of the Heart & Arteries & the Peristaltic Motion of the Intestines. The latter is always diminished & rendered slower by Opium, and the Heart is affected as well as the Intestines in the same Manner, tho' it is not so readily perceptible, probably from an inherent Inability in the Heart which renders it less liable to be affected. Dr Whytt found that the Motion of the Heart in a Frog was sooner diminished & destroyed by injecting a Solution of Opium into the Stomach & Intestines than by lacerating the Brain & Medulla Spinalis or even by removing them from the Body. Dr Monro also found that the Action of Opium was extended to the Heart & Arteries & that their Motion was diminished. In a large Quantity it diminishes their Action & deprives them intirely of their Sensibility. Stalliis tells us that he always observed the Pulse become fuller & quicker in the first Operation of Opium, but towards the Close of the Operation or when given in such Quantity as to destroy Life the Pulse becomes extremely slow & weak. We must observe that Opium will have the Effect of raising the Pulse in some particular Disorders as also of restoring a proper Degree of Heat. This Effect does not depend upon it being a Stimulus as Stallius supposes but is owing to the Pain & Anxiety upon which this Weakness of Pulse depended being removed by the Sedative Virtue of the Opium. Stallius from his Theory was led to give Opium freely in Cases where Debility prevailed and does not therefore not be surprized at the Effects which he found take Place. Our Experiments to determine the Effects of any Medicine ought always to be made

a Person in Health for by Disease the Effects of a Medicine may be so altered as to appear intirely different from what they really are. An Instance will illustrate my Meaning. Wine & Spirituous Liquors every Body will allow are in general Stimulants. In some particular Cases they will prove Sedative — as Upon a Retropulsion of the Gout into the Stomach the Pulse which was before moderate will be greatly increased. In this Case if you give your Patient a Glass of Wine or Brandy by which the Gout is again thrown into the Extremities the Pulse will be lessened & again reduced to its natural Standard. Here the Wine acts as a Sedative but this Effect is produced by acting in the first Place as a Stimulus.

In general Opium renders the Pulse slower & occasions an Accumulation of Blood in the larger Vessels. After its Operation is over it leaves the Body more sensible & irritable & hence the Heart & Arteries are more sensible to the Accumulation of Blood in the larger Vessels & therefore the circulation is increased. Hence we see the Reason why the Pain in the Rheumatism is often increased after the Effects of an Anodyne are gone off. Dr. Jones gives us several Instances in which Opium proved Cathartic. This must be produced by the Opium removing Spasm leaving the Intestines more sensible to the Stimulus of the Faeces. I knew a Gentleman who for some Time had used to take Opium who after leaving off was troubled with Costiveness which could be relieved only by again having Recourse to the Opium. From the System being left more Irritable after the Use of Opium we see that it is hurtful in Inflamations & in Inflamatory Fevers attended with Topical Fever.

Another —

Another Effect of Opium which is a strong Argument of its not increasing the Action of the Heart & Arteries is that of relaxing and debilitating the oscillatory motions of the Solids. Opium certainly has the Effect of lessening the Heat of the Body. This is confirmed by the Testimony of several respectable Physicians Van Swieten recommends Opium to lessen a moderate the Heat of Fevers; likewise in the most obstinate Stage of the Small Pox. Huscham after bleeding advises Opium to be given as a good Remedy in the Pleurisy. D.r Storck mentions its use in Acute Fevers. D.r Collin likewise mentions its use in Acute Fevers as also in Pleurisies & Peripneumonies. To this we may add an infallible Proof that the Heat of the Body is not increased by Opium, viz.t applying the Thermometer to the Body of a Person under the Operation of an Anodyne, when we will find that the Mercury instead of rising, falls below the natural Heat of the Constitution—

We are now to mention the Effects which appear when Opium is given to a Person in Health in a full Dose— There ensues sometimes after taking it a cheerfulness & Serenity of Mind & liveliness of Imagination; the Pulsation of the Heart & Arteries is rendered slower and fuller— the Heat of the Body is rather diminished— the different Secretions are diminished except Perspiration which is increased— the secreted Fluids become thicker— there is a Dryness & Disagreeable Taste in the Mouth & Fauces— the Body is rendered costive— the Respiration is slower— the Veins on the Superficies especially on the Head & Chest appear full & distended— the Skin becomes red & there is a Difficulty of Breathing.

It—

It alleviates Pain, solves Spasm, refreshes the Body & disposes to Sleep — These are the Effects produced in a Person out of 10 —

We are now to account for its Operation — but before we descend to Particulars we may observe, that we can in general account for the various Phenomena from its diminishing the Sensibility & Irritability of every Part & from this Effect being greater in Proportion to the Distance of the Part from the Sensorium — Hence the inferior Extremities are much sooner affected by Opium than the superior Parts of the Body. The Heart from the constant Stimulus to which it is exposed & being so near the Sens: Commune is last affected of any Part —

The Chearfulness & Serenity of Mind are occasioned by all disagreable Sensations being removed. But in all Cases where the Spirits have been raised artificially they are afterwards depressed in Proportion as they were elevated so after the Operation of Opium is over a Languor & Debility succeeds. The Turks never take a second Dose until the Effects of the first are pretty well gone off & they begin to find themselves low & dispirited. In general the Effects of Opium are Sedative but in some Persons it has quite the contrary Effect. In these it occasions the greatest Chearfulness & rather keeps them awake than disposes to Sleep. But for one Person who is thus kept awake 99 are lulled to Sleep. The Variety of Effects in different People must be accounted for from Peculiarity of Constitution. We observe that different Preparations of Opium will have different Effects upon the same Person — Laud —

Laudanum in general will check a Vomiting, but sometimes
so far from having this Effect that it tends to increase it.
Persons will sometimes vomit upon taking a new Pill
of Opium when one that has been kept three or four weeks
will have no such Effect. Huxham tells us that some
Persons will bear Diacodium that can not bear Opium
Geoffroy tells us that he knew Persons that could take a
watery Solution of Opium when a Spirituous Tincture
drove almost to Madness. Willis tells us of Cases in
which Opium brought on almost total Oblivion. I
must here repeat to you one Caution with Regard to
the Exhibition of Opium from Van Swieten. If you
are unacquainted with the Constitution & Habit of your
Patient, the best Method is to dissolve a few Grains of
Opium in some proper Vehicle e.g. Water of which a
small Quantity is to be taken frequently until the
desired Effect is produced. By this Mean we may
effectually prevent the bad Effects which might arise
from overdosing the Opium, but if the Intervals
between each Dose be long we will frequently be
disappointed Your Expectations are seldom so well
answered as if a full Dose had been given at once.
A larger Quantity is often taken in this Way than
would have been necessary had a full Dose been
given at first. We should never confine ourselves
to any particular Quantity, for tho' 9 j. is commonly
sufficient, in some Cases as in great Pain or Irrita-
tion this Quantity can have little or no Effect &
a much larger Dose will be necessary. —

Opium also gives Fortitude to suffer Pain & incur Danger. This is owing to the Sense of Pain or Danger being diminished, rather than to any real Courage it inspires the Mind with. The Turks take Opium before a Battle or Exploit to lessen the Fear of Danger. Van Swieten recommends Opium to be given before performing any capital Operation in Surgery, not only to diminish the Sense of Pain, but also to lessen the Fear & make the Person more readily submit to the Operation.

The Quickness of the Pulse depends upon the Sensibility of the Heart & Arteries. Whatever therefore diminishes these will render the Pulse slower. The Action of the Heart and Arteries is not diminished like that of other Muscles. This some have accounted for supposing that the Heart is furnished with Nerves from the Cerebellum while the Muscles of the Animal Functions are supplied from the Cerebrum. This Theory however is wrong in every Respect. The Fulness of the Pulse is owing to the Relaxation which takes Place & to the Accumulation in the larger Vessels, for as the Circulation in the smaller Vessels is soonest checked the Blood must necessarily be accumulated in the larger ones. Opium diminishes the Animal Heat. The of the Body is entirely connected with the Circulation. Were the Circulation is increased by any Means we always find the Heat of the Body augmented. And so the contrary. Therefore as Opium has the Effect of lessening the Action of the Heart & Arteries it must necessarily —

diminish the Animal Heat -.

It was observed that Opium checks all the Secretions except Perspiration which is increased & that it rendered the secreted Fluids thicker. The Fluids become thicker by the more fluid Parts being absorbed during their Stay in their different Reservoirs. Hence it is that Opium is so serviceable in Catarrhs & Serous Defluxions where a thin acrid Matter irritating the Bronchiæ produces an almost incessant Cough. In this case by giving a Dose of Opium in the Evening we lessen the Sensibility of the Part & the Irritation is removed. Hence the Mucus is allowed to accumulate & acquire a proper Degree of Consistence & Mildness & is then properly expectorated. The Thirst & Dryness of the Mouth & Fauces after taking Opium is owing to the Secretion & Excretion of the Saliva being diminished. The disagreeable Taste is owing to the Saliva from Stagnation undergoing or inclining to Putrefaction.

Opium renders the Body costive. The irregular Excretion of the Feces in a great Measure is owing to the Sensibility of the Intestines to the Stimulus of the Bile. Opium by rendering the Intestines less sensible & irritable will necessarily produce Costiveness. The usual Evacuation by Stool after taking a Dose of Opium is found to consist of white or ash colored Feces. This Effect we know depends upon the Bile not being properly mixed with them. We may therefore infer that Opium diminishes the Secretion of Bile. Thus the proper Stimulus to the Intestines being removed this will

further to produce a costiveness. From its deminishing
the Secretion of Bile, Opium proves extremely useful
in the Cholera Morbus, as it not only lessens the Pain & vio-
lent Vomiting & Purging, but also lessens the too great Secretion
of Bile upon which this Disease depends. Opium is said
sometimes to produce a Difficulty of making Water or even
a total Suppression of Urine. This may be readily removed
by any sudden Terror or by applying Cold suddenly to the
Bladder.

Opium renders the Respiration less frequent—
Respiration becomes less frequent whenever the Irritability
of the Lungs & their Sensibility to the Stimulus of the Blood
passing thro' them is deminished. Hence we find that
a slow Respiration attends all Soporose Disorders as Apo-
plexy Lethargy &c. Trallius tells us that he always
found the Respiration quickened by Opium. This indeed
would be the case did it increase the circulation as he
supposes, but in healthy Persons the Respiration is
always rendered slower. It is remarkable that in
all those Cases in which Trallius tells us the Respiration
was quickened, the Opium had been taken in too large
a Dose, when this Symptom comes on towards the close
of the Operation.

Opium dilates the Blood Vessels particularly
the Veins about the Head & Face with a Sense of Fulness
and Constriction. When the Irritability of the smaller
Vessels is diminished the motion of the Blood through
them is also diminished— Hence an Accumulation
takes Place in the larger Vessels. To this we may also
ascribe an Experiment of Dr. Monro's who supposed the
Blood possessed a certain Elasticity which he ascribed

to the Air combined with it — by this the Blood always en-
deavors to expand itself, but is contracted by the Muscular
Power of the Vessels so that when these are relaxed the
Blood rarefies & distends them. Haller remarks that ~~the~~
during Expiration the Veins on the Surface appear distended
blue & cylindrical; during Inspiration, collapsed pallid &
as if they contained no Blood. When the Respiration is fre-
quent this Change often ~~never~~ takes Place ~~xxxxxxxxxxxx~~
~~xxxxxxxxxxxxxxxxxx~~ but then it is less remarkable. When the
Respiration is slower it is not so often produced but then
it takes Place in a greater degree each Time. Opium
therefore produces the Distention & Fulness of the Vessels
by rendering the ~~Pulse~~ Respiration slower. By slow
Respiration the Blood has Time to accumulate in
the Veins, by which they are distended & occasion a Sink
of Fulness & Constriction ~~&~~ as the Vessels about the Chest &
Head are most affected by Respiration from their
being near the Lungs the Distention in them is
more remarkable. This is not, as Wallius supposes, from
Opium determining the Blood more particularly
to the Head. The Veins of the Head have fewer Valves, are
larger & are capable of receiving more Blood. Hence
the Regurgitation during Expiration is more evi-
dent in these than in any others. The Sensibility &
Expression of the Face renders a Change in the State
of the Vessels there more evident & we may often observe
a Fulness & Distention in the Face which is not visible
in any other Part of the Body. The Appearance of
Plethora & Redness is owing to the red Blood entering the

the Serous Vessels from the Relaxation which takes Place.

The Difficulty of Breathing & Oppression at the Breast which Persons are sometimes troubled with for one 2 or 3 Days after taking Opium is occasioned by a Collection of Mucus in the Follicles of the Bronchiæ, which by Stagnation has the fluid Parts absorbed, becomes thicker & is converted into something like Pus. This is at first difficultly thrown up, but after some Time becomes like Pus & is readily expectorated & the Difficulty of Breathing & Oppression go off & the Infarction of the Lungs is relieved. The bad Effects of Opium in the Pleurisy when improperly or injudiciously administered before the Obstruction is resolved are produced in the same Manner by a Collection of Mucus. Hence it is useful in many Cases to combine Squills with Opium to prevent this Inconvenience.

Opium alleviates Pain & Solves Spasm, refreshes the Body when fatigued by Exercise or Labor by diminishing the Sensibility & Irritability of the System or of the Part affected. It occasions Sleep by debilitating or relaxing the Organs of Sense & Motion - by taking off Pain removing Irritability - by diminishing the Impressions on the Mind or Sens: Commune & by rendering the Mind quiet & serene. This being in a Manner deserted by the Senses, receiving no Impressions from Impulses from without or from violent Agitations from within, it desists from distributing the Nervous Power to the different Organs which then do not perform their usual Functions - Sleep then must necessarily ensue. We well know that while we

we remain busily employed either in Body or Mind, Sleep remains a Stranger to us. But how it is that Opium renders the Mind insensible we cannot explain nor perhaps is it to be explained Some have imagined the Operation of Opium on the Mind to be owing to a Rearefaction of the Blood compressing the Brain. If this were the case this Effect ought always to follow upon taking Opium. No Condition is so regular in producing its Effects & acts so invariably in the same manner as mechanical compression of the Brain. When the Brain is compressed we find Sleep, Stupor & Apoplexy are produced constantly in Proportion to the degree of Pressure employed. This I had an Opportunity of observing in a Boy who had been scalped & tomahawked by the Indians & had lost Part of his Cranium, the Brain being covered only by the Pia & Dura Mater. Pressure always produced Sleep which was more or less sound according to the degree of Compression. But we find that it is not always the Effect of Opium to produce Sleep. It sometimes occasions, Watchfulness, Giddiness, Intoxication & Convulsions without our being able to account for such different Effects when we endeavor to do it we only grope in the Dark & know Nothing about the Matter.

After the Narcotic Effects of Opium are gone off the Sensibility & Irritability return by degrees & are even increased beyond what they formerly were. Pain which was alleviated by its Use returns often with greater Violence. The Body feels heavy & the Mind dejected & there is frequently a Pain in the Head. These Effects are owing to the Functions being injured &

and remaining for a Time weak & unfit to perform their Office. The Increase of Pain is owing to the increased Irritability which is left after the Operation is over. When taken in larger Quantities or often repeated Opium enervates the System & weakens the Animal Functions particularly those of Digestion & Chylification. The proper Exercise of these & Muscular Motion depends on the Strength & Force of the Nerves. When these suffer & are unstrung those are necessarily weakened.

From what we have said on the Mode of Operation & Effects of Opium you will be enabled to understand in what Cases it is proper in what particular Diseases it is to be employed & the Time & Manner of exhibiting it. It appears from what we have said that the Operation of Opium is exerted chiefly if not altogether on the Nervous System & that it does not warm the Blood nor quicken the Pulse —

This Subject will be continued, Gentlemen, at our next Lecture. ——

Lecture 23d.

We now come to the Diseases in which Opium is employed & are to point out the proper Times for administering it. Its principal Use is a Palliative & often is an effectual Cure for painful Disorders. Pain may be considered as of three Kinds —

1st. From Inflamatory Distension —
2d. From Spasm &
3d. — From Irritation —

All Pain I think may be referred to one or other of these Causes. We have an Instance of Pain from the first Cause in all Cases of Topical Inflamation — in Pleurisy Rheumatism & the like — Here Opium can have little or no Effect in producing a Cure. It can afford only a temporary Relief by diminishing the Sensibility of the System, tho' even this Effect is often counterbalanced by the bad Effects which it produces by leaving the Body more irritable & susceptible of Pain; & by causing an Accumulation in the larger Vessels which stimulates the Heart & Arteries and increasing the Irritability the Circulation will be increased & the Inflamation & Pain much augmented. We should therefore be cautious how we order it in this Case except on particular Occasions. In the Pleurisy or Peripneumony there is sometimes an Irritation in the Trachea which produces an incessant Cough & a thin acrid Mucus is poured out which both irritates the Parts — a good Dose of Opium will

will alleviate it by rendering the Mind insensible to the Stimulus, whence it is retained in the Follicles & acquires a proper Degree of Consistence & Mildness; but it is highly necessary that Evacuations should be premised to prevent the bad Effects. To hinder it from checking the Expectoration it will be necessary to add Ipecac: Squills or some Antimonial to promote the Expectoration which is the only salutary Crisis. In the Acute Rheumatism it can answer no good Purpose as it will only afford a temporary Relief & not diminish the Disease in any Manner. In the Chronic its Use seems to be attended with more Propriety tho' even here it is seldom attended with any considerably good Effects. I am not now speaking of Opium used in those Cases when combined with Ipecac: or Tart: Emet: When given in this Way it proves a powerful Sudorific & may be employed with considerable Advantage in both the Chronic & Acute Rheumatism. The Toothach is often a Rheumatic Affection & attended with Inflamatory Distension & is commonly relieved by the external Application of Opium without any bad Effects being produced for as it is applied topically its Action is not extended to the other Parts of the System. It not only takes off the Sensibility of the Parts but also tends to destroy the Nerve.

Opium has been used to mitigate the Pain in the Gout. We had better refrain from its Use during the Paroxysm. We are however sometimes obliged to have Recourse to it when the Pain is very violent & requires a temporary Relief. At the Close of the Paroxysm when the Inflamatory Symptoms are gone off & a disagreable Restlessness &—

and Irritation continue Opium will frequently prove highly salutary. Opium is very useful in Suppurations which often irritate the whole System. It takes off the Pain & Irritation attending them & promotes the Suppuration. Upon this is founded the Use of Opium in the Small Pox in which it is often used with good Effects. Here when the Patient is restless a Dose of Opium will compose him and leave Nature uninterrupted in her Endeavors. When we use Opium in this Disease we should guard against the Costiveness which it is apt to produce, by Emollient Glysters.

In the second Kind of Pain or that arising from Spasm Opium is universally indicated. Here it is not only a Palliative but often times radically cures it. In flatulent Colics it is prudent first to open the Bowells with laxative Glysters or gentle Purgatives. If the Pain is accompanied by Heat, a full, quick, hard Pulse with high colored Urine & great Weakness & Debility & the Abdomen feels sore upon being touched, there is Danger of an Inflammation of the Intestines having taken Place. This is to be removed by very copious Bleeding & the Antiphlogistic Regimen. When there are no Symptoms of Inflamation Opium may be administered with Safety & Advantage. In the Cholera where there are violent Evacuations both by Stool & Vomiting attended with violent Spasm, Opium is an excellent & indeed a sovereign Remedy, & our only Refuge. The Patient should drink plentifully of Chicken Water or any other diluting Liquor & these may likewise be injected into the Intestines by the Anus. Cloths dipped in Vinegar may be applied to the Abdomen. If by these Means the Discharge is not checked we must have

Recourse to Opium which may be given internally & injected in Clysters. In Bilious Colics the same Method is to be pursued. In this as well as in the Cholera it will generally be necessary to take away some Blood especially if the Patient is of a robust & plethoric Habit of Body. Opium also diminishes the Secretion of Bile & is thus doubly useful in a Bilious Colic.

In the Ileac Passion Opium is useful. This is frequently accompanied with bowing to Spasm & is one of the most distressing Disorders to which the human Frame is liable. In this one principal Indication is to evacuate the Contents of the Bowells & to remedy the Costiveness which attends it. This Costiveness is frequently produced by Spasm, and unless this is allayed no Evacuation can take Place. I have frequently seen Patients tormented with vomiting Castor Oil &c. when the Spasms were so violent that the Stomach could not retain a Spoonful of the most agreeable Liquor. A good Dose of Opium may be here given with Assurance of Propriety & Success. We may likewise combine Opium with our Purgatives for tho' it may in some Measure counteract their Effects yet it will more than compensate for this by solving the Spasm. Purgatives will have no Effect unless Opium is employed to remove the Spasm.

In Colica Pictonum or Dry Belly Ach Opium should precede the use of Purgatives according to Gillary & De Haen.

Opium may be employed in Spasmodic Affections of the Stomach. It should not however be used too freely, for as these mostly depend on Debility & Acidity the

the continued Use of it will only tend to increase the Cause. It therefore can be considered as a Palliative only.

Opium is an effectual Remedy in Spasmodic Affections of the Uterus. They are of three Kinds—

1st. Those that occur at the Menstrual Period—
2d.— During the Flow of the Lochia—
3d. Those that occur during Child Birth

At the Menstrual Period there are frequently Spasms of the Bowells & Uterus which may be effectually removed by Opium. It is likewise an effectual Remedy for those Pains which occur after Labor & are called Grinding Pains. The Opium should be given in the Beginning of the Pains for when they continue any Time they are apt to produce an Inflamation of the Uterus. When this is the Case cooling Fomentations are to be applied to the Abdomen & other Remedies of an Antiphlogistic Tendency are to be made Use of. We should be particularly certain that these Pains are not the Consequence of an Injury done to the Uterus during Labor. These Spasmodic Pains which sometimes precede real Labor Pains & are commonly called false Pains are most effectually relieved by Opium which does not hinder the real Pains from coming on.

Opium is also used to prevent Abortion. If Labor Pains come on at an improper Period during Pregnancy the Woman is threatened with Abortion. In this Case we should first take some Blood from the Arm, give an Anodyne & enjoin Rest & Composure of Mind. If the Pains return these Remedies are to

be repeated. By this Means many Abortions have been
prevented. If an Hæmorrhage comes on without Pain
a Giddiness of the Head & Swimming of the Eyes with a
Change of Countenance all our Endeavors to prevent
a Miscarriage are fruitless - the sooner it happens the
better. &

Opium is also useful in a Paroxysm of the Nephritis. Here we should first open a Vein, evacuate the Bowells by emollient Glysters which also tend to relax the Parts, give Opium twice or three Times a Day - emollient Fomentations should be applied to the Parts most affected. This should be used while the Patient is in Bed but he should also be frequently taken out of Bed so that the whole Body may be relaxed. To relieve the Sickness of Stomach which generally oppresses we may apply a Bag filled with Mint or Lavender that has been infused or moistened in hot Wine or Spirits. The Patient should also drink some emollient Liquor as an Infusion of Mallow Leaves or Roots or any other mucilaginous Substance. The Opium should be repeated from time to time during the Paroxysm until it is sufficiently relieved. We are afterwards to have Recourse to the most approved Medicines for preventing a Return. When a small Stone falls into the Ureters or Neck of the Bladder from the Irritation it occasions it prevents the Urine being collected in sufficient Quantity to carry it forward - Opium by diminishing the Sense of Pain takes off the Attention of the Mind to the Stimulus, hence the Urine is collected in sufficient Quantity to dilate the Ureters or Neck of the Bladder & when discharged carries the

Stone along with it. The other Remedies which are applied and which are generally of an Antispasmodic Nature also contribute to this Effect by the Relaxation they produce.

Opium is generally employed for the Cure of the Tetanus, Opisthotonos & what is commonly called the Locked-Jaw. These are purely of a Spasmodic Nature & are generally accompanied with some violent Irritation affecting the Nerves. Locked-Jaw is often brought on by a Puncture or other Lesion of a Nerve and is often produced by the most trifling Prick of a Toe or Finger. When it is within Reach of the Knife we should never hesitate to take off the affected Part or Joint. The Disorder generally proves fatal unless the Remedies are employed in Time. Opium is the most useful Remedy & should be given internally or applied externally. In the London Medical Essays there are several Instances of a Lock-Jaw coming on from the Lesion of a Nerve - which were all cured by Opium. There is one Case related by Mr. Thomas White a judicious Surgeon at Manchester & since republished in a Vol: of Surgical Cases / a Book which I would recommend to your careful & attentive Perusal / in which the Lock-Jaw was brought on by a Wound in the Finger. In this Case Opium was given & checked the Progress of the Disease but did not remove it - the injured Joint which had not till then been taken Notice of was amputated & Opium was then given with Success & the Disease removed. The Doses of Opium which are proper in other Cases have no

no Effect in this. The Patient will bear an incredible Quantity without the least Inconvenience. In this there is the Irritation & Convulsion of the Nervous System in so great a Degree that there are Instances of many Drachms being taken without Relief. We should give in small Quantities & so often as to have some Effect in moderating the Symptoms.

Opium has been employed to relieve the Asthma. This is of two kinds—

1st. The Spasmodic which is owing to a Constriction of the Vessels on the Surface of the Lungs & Bronchiæ—

2d. The Humoral which arises from too great a Secretion or Defluxion of Mucus on the Lungs.

In the former there is no Secretion or Excretion of Mucus during the Paroxysm. In the latter there is too great a Secretion &c. In the former Antispasmodics & Opium are proper; in the latter Stimulants. The former is Periodical; the latter without Intermission. In the Spasmodic Asthma Opium is given to palliate and put off the Paroxysm for this Purpose it will be proper to add Squills, Ipecac: or some Antimonial Preparation as Opium alone is apt to produce Insarction of the Lungs. These Substances will not counteract its good Effects & will prevent the bad. Sir John Floyer who was himself troubled with the Asthma, has left us an excellent Treatise superior to every Thing that has been published on this Subject as he wrote from his own Feelings, used always to evacuate the Stomach & Intestines by Emetics and Purges & then used Laud: in small Doses or instead of Opium he used a Mixture composed of the —

Distilled Water of red Poppies ℥ iij: ℥ß. Syr. Papaveris ℥ j Sal Prunellæ. I met with a late instance of a Gentleman who relieved himself of the Asthma by taking from 10 to 15 Drops of Laud: in the Morning & drinking after it two Cups of strong Coffee. By this he is so much relieved that he is not obliged to take the Opium more than once a Week or Fortnight.

Opium is also used to relieve the Head Ach. When this is owing to a Disorder of the Stomach, Emetics Purges and Stomachic Bitters are necessary. When it is of a Rheumatic or Arthritic Nature the Remedies adapted for these Complaints are to be employed. When it is from Weakness & Debility, Barks, Valerian, Cold Bath & Chalybeates are to be used. When it is more purely Nervous Opium is the proper Remedy. When it returns every Day at a certain Hour, Opium when given about Half an Hour before it usual Return will prevent it & if repeated will cure it radically. We should in the Head Ach first give an Emetic & the Barks as for an Intermittent Fever, if these do not succeed we may then give Opium combined with Ipecacuanha. This will have the Effect of throwing the Patient into a profuse Sweat & relieves the Disease. For Instances of Head Achs being cured in this Manner I refer you to Dr Whytt's Treatise on Nervous Diseases.

The third Species of Pain is owing to Irritation. Here Opium is used as Palliative; thus in a Cancer when the Patient is past Recovery we order an Anodyne at Night to mitigate the Pain; Besides this it will contribute to the Formation of laudable Pus & thus alleviate the Disease.

It —

It is also used to mitigate Nocturnal Pains in the Venereal Disease & to palliate this until Mercury or some other Method can be employed to remove it effectually. It is also used in Vicious Suppurations as of the Liver, where it will afford a Relief to the Patient without occasioning any Injury. It is also used to alleviate troublesome & despite Coughs in the latter Stage of Consumption. When this is excited by Pus collected in the Lungs Opium can not afford much Relief; but in the latter Stage it is frequently produced by an Acrimony & an Abrasion of the Mucus of the Trachea - Here Opium proves very serviceable ——

Opium has been employed both by Antients & Moderns for the Cure of Intermittents. Given in a sufficient Dose about Half an Hour before the Accession it prevents it for that Time from coming on & if repeated will cure it entirely. Here it acts as an Antispasmodic & if given too long before the Fit it will have no Effect, nor has it any during the Paroxysm. Opium may also in this Case be advantageously prescribed after the Operation of an Emetic especially in the Evening to promote Perspiration & Solution of the Stricture on the Surface previous to the Use of the Bark.

Opium is also used by some in Nervous Fevers to procure Sleep & to compose the Patient; but it is seldom safe in the Beginning; and in the Decline the Body rather requires something to stimulate & support the Vis Vitæ than Sedatives which tend to depress it. But in Cases of violent Affection we may have Recourse to this Remedy. If the first Dose does not relieve we should desist from the further Use of it. In this Case Antispasmodics as Camphor, Vol: Alk: & Wine are necessary.

Opium may be used with Advantage in the Diarrhoea & Dysentery after the Stomach & Bowells have been evacuated. If we give a Laxative in the Morning we may safely give an Anodyne in the Evening. I have frequently known Dysenteries cured with Nothing else. An Ounce of Sal. Glaub: may be given in the Morning, or ℥ss may be divided into 3 or 4 Doses with a small Proportion of Tart. Emetic & a Dose given every Hour in the Morning after this a sufficient Dose of Opium may be given in the Evening combined with Ipecac: or Tart: Emetic. By this the Perspiration & Determination to the Skin are promoted. By giving the Sal. cathart. divided it opens the Bowells more effectually than when given at once. If a plentiful Sweat breaks out & continues Moisture appears on the Skin it is a favorable Symptom and unless we produce a Determination to the Skin, if the Discharge be checked the Disorder will return with redoubled Violence. The next Day the same Method must be pursued. Half an Ounce of Sal. Glaub: may be divided into 2 equal Parts & the Opium combined with Ipecac: or Tart: Emet: may be given at Night. The Glauber's Salt answers another Purpose here; for Besides opening the Bowels it prevents the Tenesmus which is so violent, painful & distressing. This Tenesmus is never troublesome only when the Patient can not have a Discharge. Other Laxatives will also have this Effect as Castor Oil & Syrup of Marsh Mallows. If the Pain is very great we may add Laudanum. The milder Purgatives answer much better than the acrid & stimulating. The Neutral Salts by their Sedative Properties & the Castor Oil by lubricating & sheathing the Intestines alleviate the Pain & increase the Evacuations by Stool better than Jallap —

Rhubarb & Mercury which increase the Pain & add to the Fever

Opium is also used for the cure of the Catarrh - but here its Use is ambiguous. It will be proper to combine Squills, Ipeca. or some other Emetic to promote Expectoration which will obviate the bad Effects of Opium. When it is owing to Irritation & Titillation occasioned by the Acrimony of the Mucus or its Abrasion, Opium will be highly proper. Most recent Catarrhs are attended with Inflamatory Symptoms, it will therefore be prudent to take away some Blood which relieves the Fever & acts as an Antispasmodic.

In the Measles the Cough is the most dangerous Symptom. This is often attended with Difficulty of Breathing and often occasions Inflamation of the Lungs. This is occasioned by the Eruptions occupying the Fauces & Trachea. To alleviate this we must bleed & open the Body by gentle Laxatives & order the Patient to drink plentifully of diluting Liquors. We may also order a Linctus of Oil of Almonds & Spermaceti. This allays the Coughing by taking off the Irritation in the Fauces & also extends its Effects to the Trachea. If these prove ineffectual Sydenham and others have Recourse to Opium for which they have been severely censured by many. Opium here acts as a Palliative and by taking off the Irritation which tends to increase the Inflamation does more Service than it can do Harm. De Haen & Storck tell us they used it with great Success. The Irritation produces a Constriction by which the Secretion & Expectoration of Mucus are prevented - Here an Anodyne by taking off the Constriction promotes Expectoration -

Opium is also used in Hemorrhages where it acts as an Antispasmodic & by diminishing the Action of the Heart &

Arteries, by which it checks the Evacuation. Trallius tells us he used it in every Case of Hemorrhage owing to Stimulus & Irritation. Thy& recommends it in every Hemorrhage accompanied with Pain. In the Menorrhagia Gravidarum Glysters of Warm Water with 40 or 60 Drops of Laud: may be given with Advantage. When it is owing to Spasm & Irritation we may administer Opium freely & it will often relieve. When a Hemorrhage is owing to an increased Action of the Heart & Arteries, Bleeding & the Antiphlogistic Method will be necessary. When it is owing to Debility Opium will be hurtful by adding to the Relaxation. But in both Cases a temporary Relief is sometimes necessary, when the Hemorrhage is so great as to threaten Life. In this Case Opium may be given. But it acts merely as a Palliative & after its Effects are over the Hemorrhage will return. When the Disorder is owing to Debility I would always prefer Wine to any other Remedy; but whenever it is owing to Spasm & Irritation the Opium may be administered freely with Safety & Advantage. It moderates and alleviates the Pain & I have been successful in Hemorrhages of the Uterus by Opium, which had resisted every other Remedy. When these are owing to Plethora or Debility Opium is only a Palliative & should be employed only in pressing Cases to give us Time to employ other Remedies to remove the Complaint effectually.

Opium has lately been introduced into Practice as a Cure for the Venereal Disease in all its Stages, upon the following Quasion. A Gentleman belonging to the Military Hospital at New York was afflicted with the Venereal Disease to such a Degree that it baffled all the Efforts of Medicine. Despairing of Relief he quitted New York & went to England

that he might die in his own Country & among his Friends. His
Friends at New York considering him as a dead Man were some
Months after surprised to see him return to New York with his
former Alacrity & Vigor. They were curious to know in what
Manner so extraordinary a Cure was performed, when he gave
the following Account of himself — That after his Return
to England he took Opium in sufficient Quantities to
alleviate his Pain & in such Quantities that it was sup-
posed he wished to shorten the Period of his miserable Life.
He was surprised to find that the Ulcers put on a healthy
Appearance & showed a Disposition to heal. This did not
however cause him to remit his former Course. He continued
& was perfectly cured after some Time without the Use
of any other Remedy. This Case excited the Attention of
the Military Practitioners who made Trials of it & found
it to answer their Expectations. From that Time it was
used in the Hospital upon every Occasion & in every Stage
of the Disorder & with invariable Success. Dr. Michaelis
Physician General to the Foreign Troops in the British
Service assured me that no other Remedy had been
employed after this Period in the Hospital Department
under his Care & that it did not fail in a single Instance.
The Patient began with taking Gr. 2 or 3 two or three Times
a Day. This Dose was gradually increased until they took
10 or 12 Gr. every 24 Hours. He did not appear to suffer any
Inconvenience from this Quantity of Opium. It seems as
if the System soon accommodated itself to the Use of this
Remedy. The Ulcers were washed with a watery Solution
of Opium. Dr. Schopf Surgeon to the Anspach Regiment
related a Case of a Fellow who was twice apparently cured
by Mercury but it broke out both Times again. He —

He was then put upon a course of Opium & was cured effectually
I have used Opium in the Venereal Disease both singly & combined
with Mercury. In a Gonorrhoea Pure Nothing else but Opium
unless perhaps a little Gum Arabic, Gr. j. of Opium in Pill three
one sometimes at Noon & Gr. ij at Night. I used it with Success in
one Case at the Pennsylvania Hospital when there were
Venereal Ulcers in the Penis. Opium was applied externally
to the Ulcers in Solution & also use internally. The following
Case seems to show the Efficacy of this Remedy. A Gentleman in
this City has been affected several Months with an Ulcer
in his Groin in Consequence of a Venereal Bubo which
would not yield to all the Remedys that had been em-
ployed. Mercury had been used without Success. The Knife
and Caustic had been employed to remove the hard Edges
of the Ulcer but they always grew up again. When my
attendance was desired I found him with an Ulcer
about the Size of a French Crown in the Groin, with
ragged uneven Edges. another was making its Ap-
pearance on the Pubis. He was ordered to take Barks &
Mercury & as we feared the Ulcer would degenerate into
a Cancer we ordered him to take Extract of Hemlock &
to foment the Ulcer with an Infusion of Dittany. he
was likewise ordered to take a sufficient Dose of Laud:
every Night to ease his Pain. By these Means the Progress
of the Disorder was checked, but the Ulcer put on no
Appearance of healing, we therefore determined
to administer Opium in such Quantities as to keep
him quite free from Pain. The Dose was increased
until he took from 10 to 12 Grains every 24 Hours.
In a few Days the Ulcer put on a favorable Appear-
ance & in 3 Weeks was intirely healed — Since

Since this Time I have used Opium in every Venereal Complaint. When these are long continued I generally combine a Corrosive Sublimate or Calomel with it. I never find that it makes the Patients Drowsy for as they are not conscious that they take Opium they do not expect any such Effects therefore they will not yeild to any Feelings of this Kinds. It is apt to render the Body costive, this therefore must be guarded against by the Use of gentle Laxatives.

Opium is the Product or inspissated Juice of the Papaver or Poppy which grows Spontaneously in the East Especially in Egypt. This Narcotic Quality is common to all the Poppies but is most remarkable in the Oriental Poppy. The best Opium comes from Egypt where it exudes from the Poppy from Orifices made by a particular Instrument. It has been long an Inquiry to discover a proper Menstruum to dissolve Opium & to correct its bad Qualities but all the different Preparations vary in no other Respect than by weakening the Opium. But this can be more effectually done by lessening the Dose. One Grain in Substance is generally a Dose to a grown Person in Health, but this in some cases is insufficient. Opium does not act so speedily in Substance it is therefore best to give it in Solution. We should give a large Dose at first & if this does not produce the Effect desired we may give Half a Dose in Half an Hour or before the Effects of the first are gone off. The System in a short Time accomodates itself to a certain Dose of Opium & this will then no longer

produce any Effect. There are Instances of ℥ j. being swallowed Every Day for 18 Months. I do not here speak of the Turks who frequently swallow ℥ j. at a Time for an Amusement not only without any Inconvenience but are evidently exhilarated by it. There is one Instance of a Turk who swallowed ℥ iiij at a Time without any other Effect than that of making him stupid & senseless, but these Symptoms soon went off after he had got some Sleep. Hamppfer who lived a considerable Time among the Turks tells us that those who use Opium freely are melancholy & stupid & like those who use Spirituous Liquors in Abundance. Nay there are some Instances of Persons who accustomed themselves so much to the Use of Opium that when they could not procure it they perished. Hasselquist in his Travels to the Eastgives us an Instance of an Arabian Nobleman whose Servants forgot to provide themselves with Opium upon a Party of Hunting. The Master at the usual Hour called for a Dose of Opium & as was soon sensible of their Neglect. He dispatched Messengers to different Places to procure some but before any of them could return he expired. Here we have an extraordinary Instance of the Effect of Habit upon the Constitution. A Person may so accustom himself to the Use of a Drug as to perish for the want of it when it would prove Poison to a Person who is not used to it. As this is the Case Endeavors have been made to discover an Antidote to counteract the bad Effects of Opium when taken in too large a Quantity

For this Purpose Acids have proved most effectual. & for this Reason we should not combine Acids with Opium for Medical Purposes. Nothing can be more improper than for Physicians to combine Opium with acidulated Julleps. We should give the Acid before the Patient has become so insensible as to lose the Power of swallowing. Stimulating acrid Glysters may also be injected & Sinapisms applied to the Extremeties Dr. Haller gives us an Instance of a young Woman who from taking 10 Grains of Opium fell into a Sleep which lasted two Days. She was recovered by tickling the Uvula & Fauces by which a Vomiting was brought on which threw up Part of the Opium.

Some say Opium given in any Quantity will not kill a Person, but Experience proves the contrary.

Lecture 24th.

Cicuta or Hemlock.

There are several Plants which go under this Name. Linnaeus to distinguish the one we here mean calls it Conium Maculatum, & continues the Term Cicuta to the Water Hemlock which is not our Hemlock but that used by the antient Greeks as Poison, by which Socrates perished.

Hemlock has always been esteemed a good Remedy in external Applications to resolve Scirrous Tumors, but it has lately been found by Dr. Storck of Vienna to be useful internally for the Cure of Schirri & Cancers. There has been great Difference in the Opinions of Physicians with Regard to its Utility while some confirm Dr. Storck's Observations others as positively deny them. Both are perhaps in the Right, but appear to have differed with Regard to the Name & Nature of the Disease. To understand the Effects of Hemlock we shall here make some Observations on the Nature of Cancers. What I have to say on this Subject is chiefly extracted from a Treatise which was published some Years ago in the Swedish Language in which the Author transmitted it to me. Few Persons have had the Experience of this in this Disease. He was furnished by the Swedish Government with a Sum of Money to purchase from M. Guy the Use of his Powder for 20 Years. He was applied to by Persons from all the Northern Parts of Europe by which he acquired a Knowledge of this

Disease superior to any Person now living. He had practised for 15 Years in these Complaints when he wrote this Treatise. He divides the Cancer into three Species, Genuinus, Fungosus & Scrophulosus. We shall describe each of these in Order & from their History Course endeavor to Characterise them so as to be distinguished one from the Other.

The Genuinus is the most common & appears first in the Form of a Schirrus quite small sometimes not larger than Half a Pea, hard & moveable & increases by Degrees in Hardness & Size tho' sometimes it remains small & indolent for many Years. They increase in Size from that of a Pea to an Almond or Hazelnut sometimes they resemble to the Touch a small Tendon or a Peice of Twine. In the Beginning they are smooth as they increase they become uneven, hard, rough, indented & angular & sometimes they assume a conic Form with the Point outwards, but are in general round. They do not increase by the communication of several Tumors as in the Scrophulous Cancer, but the same Tumor grows from the Size of a Pea, to that of an Hazelnut, a Walnut, an Egg, a Fist & sometimes till it occupies the whole Breast. They are in general single & solitary in the same Breast with no glandular Swellings unless by Accident, except the Glandula Subaxillaris grows hard & is felt deep in the Armpit in Figure, Size Shape & Hardness like the Yolk of an Egg boiled hard. While they are small & before they become fixed to the Muscular Expansion they may be easily moved from one Part to another. When they are near the Skin they are perceptible to the Eye &

and appear raised, the Skin not appearing affected or Discolored. tho if they are very near they soon become fixed to the Skin which then becomes wrinkled. The Size which they acquire before breaking is various, being sometimes that of an Egg or a Man's Fist. When they break the Skin becomes red and painful to the Touch, it chops & from the Fissures a thin Sanies oozes out; the Edges become hard uneven & reflected in Conformation & Hardness like Cartilage. When extirpated & pressed between the Fingers they appear as if Sand was closely confined & compacted in them. The Sore never affords good Matter but always a thin Sanies or Ichor. All Mercurial Preparations are greatly injurious in the Beginning & they precipitate & hurry on the Growth and Breaking. Mineral Waters & all the Preparations of Steel are also injurious but less so than Mercurials. When the Tumor begins to shoot or becomes sore & painful there is little or no Hope of discussing it unless it is extirpated immediately it from that Moment grows larger. It is always aggravated by what are called emollient or discutient Applications without exception Hemlock. When smart they will continue indolent & without Pain for many Years. At other Times Pain is felt in bad Weather, & during the Menstrual Flux a shooting cutting Pain is sometimes felt, but this seldom lasts longer than a Moment. Sometimes pungent Pain is felt in the Cancer as soon as it is formed or at least before it has acquired any sensible Size. Those which are round and even like an Almond are the least painful while those that resemble a Sinew or Twine are very painful from the Beginning before they are perceptible to the Eye or Touch. A Schirrus which is situated in the

upper Part of the Breast when the Pain tends to the Sternum and Cavity of the Thorax or to the Armpit is the most dangerous tho it is not fixed, as the large gland in the Armpit is soonest affected. When this is the Case every Thing is useless, even Extirpation itself comes too late, for from the Situation of the Subclavian Vessels we dare not venture to cut upon the Gland so as to take it out intirely, unless at least we grow bolder by Experience.

In this Species Hemlock will not have any good Effects. Some Physicians say that they have, by it, cured real Cancers. They mean no Imposition but have themselves been deceived.

From the long Experience of our Author Dr. Berken it appear that Hemlock is of some Use in Scrophulous Cancers or rather Schirri, but is of Still more Service in real Scrophula & old Venereal Ulcers as also in Affections from Indurations & Tumors of the Gal in the Cellular Membrane; but in genuine Cancer it is hurtful It kills & diminishes the Sense of Pain for the first Weeks but ere long it increases & extends faster than before. If a great Quantity is given it quickens the Progress of the Disorder & advances it to an open Sore many Days sooner than would have been the Case had it been left to take its own Course. It acts probably like Mercury by irritating without being able to remove the Obstruction. Dr. Berken had the Extract of Hemlock sent him from Vienna & often used it when the Disease had eluded every other Remedy & in the Bigonney, when it was afterwards extirpated by Guy's Powder. He began with small Doses & increased them gradually

until he gave an Ounce in 24 Hours with no other Effect or Inconvenience but a Confusion or Giddiness of the Head. In Cancers of the Mouth & Fauces it produced Salivation like Mercury. In those Cases where Guy's Powder could not be employed as in the Tongue Uterus &c. he used the Hemlock with the utmost Attention & Circumspection but did not observe a single Instance of Genuine Cancer being relieved by it. A Cancer is seldom or never cured when it is extended to the Gland in the Armpit of this the following Case is a Confirmation. A Person aged 40. had a Tumor in the Breast of a conic Figure, about the Size of a small Egg which was loose & moveable & had no Connection with the glandular Substance of the Breast - there was no Hardness in any other Part of the Breast, but deep in the Armpit a Tumor was perceived like a Nutmeg very much covered with Fat & Cellular Membrane so as scarcely to be sensible to the Touch. After the Tumor had been extirpated by Guy's Powder & was so far healed that only one Fourth remained to be skinned over, small round Tumors not bigger than Peas or Cherry Stones occurred round the Sore; as these were removed larger ones made their Appearance not only around the Sore but on all that Part which had been newly skinned over. The Bottom & Lips of the Sore which had hitherto been of an healthy red put on a Cancerous Appearance; the Glandula Subaxillaris grew bigger & harder & appeared like Half an Apple with the convex side outwards. The Arm soon began to swell; the Disorder took its Course; she took the Juice & Extract of Hemlock by-

the Pour'd without Relief. Hou the Disorder appears to have been of the most virulent Nature yet the cause seemed to be situated in the Subaxillary Gland which furnished the Sore with Cancerous Virus & if this Gland could have been exstirpated at the same Time with that of the Breast there is no Doubt but it would have been cured.

In the Superior Part of the Breast there is but little Fat & the Breasts themselves are in that Part thin & flat but very glandular & more covered with the Pectoralis Major. When a Tumor occurs in this Part it soon becomes fixed; the Lymphatics absorb the Cancerous Virus & carry it to the neighboring Glands. Cancers of the Breast are frequently brought on by Passions of the Mind in Women of an irritable Habit of Body. By Experience we know that the Breasts have a great Sympathy with the Passions of the Mind. I am not now speaking of the Effects of the agreeable Passions. In nursing, lying in Women by sudden Affright or Terror, the Milk stagnates & forms Lumps, hence arise Tumors, Boils, Fistulas & Erysipelatous Eruptions. In those Women that have no Milk in their Breasts a sudden Affright or long continued Grief will produce a Spasmodic Constriction which causes Obstruction & Stagnation in the finer Vessels. We find Cancers most frequently produced by such Causes which dispose the Lymph to coagulate. If only Serum or Lymphamentum stagnates it ~~only~~ quickly forms a Crust as tough as Leather; of this Polypous Concretions are a Proof. When a Drop of Serum stagnates in the finer secretory Vessels

it becomes separate from the rest of the Blood - if it is not soon dissipated or absorbed it becomes thicker, tough & at length firm & hard from the Absorption of the thinner Parts. Every succeeding Drop by the Laws of the Circulation will add to it - this also growing harder & fuller Matter being brought to it continually by the Circulation the Tumor grows from an imperceptible Drop to a Size both visible & perceptible. The Fluids which when they first stagnated were mild & of the same Nature with the rest of the Fluids by length of Time & Heat become acrid and assume the Cancerous Acrimony. This Virus being taken up by the Lymphatics is carried to the neighboring Glands & thus degenerates from a local Schirrus to an Affection of the System with many Schirri externally & internally. It is astonishing to see the Acrimony of this Ichor. It not only eats away the healthy and sound ~~Parts~~ Skin but also melts away Cartilages Blood Vessels & even Bones which vanish without our being able to tell what has become of them. This has been observed in local Cancers where the Fluids remained sound & were not at all affected, where the Cancer was afterwards cured & the System did not at all suffer from it. Here we cannot suppose that the Acrimony preexisted in the Blood. This Acrimony sometimes first appears in Consequence of a Blow on the Tumor. It is altogether probable that the sound Fluids when they come in Contact with a Cancerous Tumor then first degenerate & assume the Disposition and Malignity peculiar to Cancers. I do not altogether

deny Schirrus may arise from Cancerous Matter in the Blood.
If this is ever the Case, which is far from being my Opinion,
the Cancer must attack several Parts of the Body both
externally & internally at the same time where it is entirely
not a local Disease. Extirpation can in this Case be of
no Service unless we are so fortunate as to find some
internal Remedy which will eradicate the Cancerous-
Virus from the System. There is no Doubt but the
Cancer Genuinus is at first in general intirely a lo-
cal Affection & may be radically extirpated by the
Knife or Guy's Powder without Danger of Relapse.
A Schirrus will often remain indolent for 30 or 40
years, but this Schirrus Benignus after first becoming
malignant when it is improperly managed or by
a Blow, or Hurt from Compression or Irritation, will
then degenerate into a Cancer, the Fluids confined
becoming highly acrid. When we extirpate a Cancer
we should be very cautious not to leave any Part
of it behind as it will increase & become as bad & even
worse than it was before. The only sure Way is to ex-
tirpate it radically either with the Knife or Guy's
Powder. The Composition of this as yet remains a
Secret but it is probably of the same Nature with
some other Substances that have been employed for
this Purpose of the Composition of which we shall
offer a Conjecture hereafter. If it should happen
that some of the Cancerous Roots, as they are termed,
should be left, the Sore will either not heal or will
break out again at a longer or shorter Period. It is
sometimes necessary to repeat the Operation several Times.

From the Cancer returning sometimes in the same Place, some Authors have been led to place the Cause in the Blood, but this is not the Case. In my Opinion if a Cancer is radically extirpated there is no Danger of its ever returning again, unless it has been communicated to the adjoining Glands and then all our Endeavors will be fruitless. This however applies especially to the Cancer Genuinus, we must altogether except the Carcinomata Scrophulosa. These certainly originate from an internal Cause and are seldom a local Disease. They attack several Places at once both of the external & internal Parts.

The 2d. Species is the Cancer Fungosus.

This chiefly occurs in lusty fat Women with large Breasts & of a lax Habit. This like the Genuinus begins with a small moveable hard Tumor, which increases much faster, is more Spongy & is more like a cluster of small ones & is not so hard to the Touch as the Genuinus; but upon breaking out it appears so totally different from the Genuinus that it is impossible to mistake the one for the other. The Growth is totally different & in Comparison is very extraordinary. As the Cancer Genuinus requires several Years to come to its Height. The Fungosus scarcely requires so many Months & in 8 or 10 Months will grow from the Size of a Nutmeg to that of a Mans Head sometimes will occupy the whole Breast with many blue or reddish blue Spots which when opened are found to contain Blood, or bloody Serum.

Then —

When this Cancer breaks it opens violently & discharges large Quantities of bloody Serum. From one or two of the Apertures arise grape or lobe like Excrescences which appear spongy & are sometimes like a Sheep's Liver & sometimes resemble the Head of a Cauli Flower. It is very different from the Gemina as which is small, round, gradually eating away the neighboring Parts & is generally dry with little or no running. The Fungous on the contrary is luxuriant without any proper Edges & puffs up in Height & Size over the whole Breast & discharges such a Quantity of Matter that no Dressings are sufficient to keep some of them dry. Tho' these Fungositis appear soft they are found to be hard & cartilaginous to the Touch. They puff up in Height & Breadth & are sometimes strangulated at the Root by the Skin. The Subascillary Gland is seldom affected, but it may be so & when it is the Disease is incurable, of this the following is an Instance.

A married healthy Lady who never had Children from a sudden Fright in the 45th Year of her Age, felt a pungent Pain in her left Breast. This Pain frequently returned & she at last perceived a small moveable Tumor about the Size of a Pea which was hard & increased considerably. The Extract of Hemlock was prescribed at first in small Doses & for some Time produced its usual Effects of mitigating the Pain & shooting the Tumor appeared as if it was divided but evidently grew larger. greater Hopes were now entertained of Recovery, when the Tumor became softer & the whole Breast larger & was altogether converted into a Fungous Cancer. It opened in 3 or 4 Places at once & puffed up from these

these Apertures. The Patient became by Degrees emaciated—
the Breast became so enormously large as to cover the other
and lay like a Pillow on the Thorax & Abdomen. She was
obliged to be lifted in a Sheet from one Bed to the other. The
Subaxillary Glands were at last affected & after 8 Months
the Patient died. Upon Dissection the Bowels all ap-
peared in a very unhealthy State, the Uterus was found
full of Cancers, the Spleen was like a Bag of black Blood
similar to that she had daily vomited. It is probable
that even in this Case the Cancer was at first local & confined
to the Breast & might have been extirpated in the
Beginning without Danger of Relapse. In this Case
Hemlock certainly increased the Disorder & accelerated
the Death of the Patient. —

This Species of Cancer is not confined to the Breast
but attacks the Neck, Shoulders, Arms & Legs. The Genui-
nus it found also on the Crown of the Head, the Face & Lips.
I shall here relate one other Case of the Cancer Fungosus
chiefly on Account of the Method of Cure which was found
effectual. A Lady, born of healthy sound Parents, had
enjoyed for a great Part of her Life a good Share of Health
She was of a sensible irritable Habit of Body. From
Inclination & the Persuasions of her Friends, she did not
forbear any of her Children, in Consequence of which
after every Lying-in she was seized with some Disorder
or other, sometimes with a Pain & Swelling over the whole
Body, at other Times with Phlegmons or Adematous Swell-
ings of the Legs or Abdomen. From these however she
was always soon recovered, till upon the Death of her
Father which greatly affected her, she felt for the
first Time, shooting Pains in her left Breast.

This continued for 5 Years & were allways worse in bad Weather or when she exposed herself to Cold or was frightened. No Schirous Tumor was perceptible nor did any Part of the Breast appear swelled or raised above the rest, but the whole Breast appeard fuller & larger than the other. On the Side nearest the Arm appeard something like a Sinew or Pack Thread. There was a Fullness in the Arm Pit with a Pain in the Arm which was constant & almost intolerable, there was also a Stiffness and Swelling in the Arm, in the same Manner as in the last Stage of an incurable Cancer, when the Vesels are compressed by the indurated Gland in the Armpit. It was therefore apprehended that if a real Cancer should take Place it would be incurable. She was ordered Hemlock and Antimonial Preparations without Releif. The Breast increased in Size, the Pain & Shooting in the upper Part of the Breast, towards the Armpit & Arm became more violent & the Weight of the Arm was intolerable. At length the Breast begun to decrease in Size, but the Armpit became fuller & a Tumor about the Size of an Hazle Nut or Nutmeg appeared under the Armpit but without the Axilla. The Danger was now become imminent & the only Hope of Releif was to procure young Puppies to suck both Breasts particularly the affected one. This was very painful as well as disagreable to the Patient but there was no other Hope of Assistance She at the same Time took a very strong Tincture of Antimony internally. This Sucking was continued for six Weeks, which in the Beginning & during its Continuance was very painful in the Nipples of Breast.* The Patient was seized with Chilly Fit which was succeeded by a Severish Paroxysm which lasted two or three Days*

+ After a Fortnights Sucking the Pain & Soreness were much in-
creased with a Swelling of the whole Breast + A yellow wish
Serum was discharged from the Nipples of both Breasts. This
after some Time went off & the Patient was intirely cured.

This Method bears a very great Analogy to that used
by the Antients who applied Live Toads to draw off the
Cancerous Virus & thus frequently cured the Disorder. A
Treatise was some Years ago published in the German
Language on the Cure of Cankers by the Application of
Toads in which we are informed that the Experiment
had been made & had proved successful. Some Years ago
met with a Case in the British Magazine in which a
Cure had been performed by this Method. We are there told
that the Toads suck till they are full & then drop off &
die. We are also told that the Virus becomes less hurtful
to them every Day. A Sign that no Virus remains is
that the Toads no longer perish & we are also told that
this Application does not cause much Pain. Since
that Time I have heard of several Cures being performed
in France as well as in England & Scotland. The Toad
should be put into a small Bag of fine Lawn or the
Sore should be covered with a Piece of Lawn, before
she is applied, when she falls to sucking immediately.
If she is put on the open Sore she will not suck at
all. This Method certainly deserves Attention & at
least is worthy of an Experiment. If a real Cancer
can be cured in this Manner it confirms our
Opinion that Cancers are not owing to an Acri-
mony in the Blood, but that a Canker is a partial Affec-
tion & is generated in the Place affected in Consequence of Obstruction
Stagnation & Corruption of the Fluids contained in Scherrous
Tumor.

Lecture 25th.

Cancer Scrophulosus.

This is different from either of the others & undoubtedly owes its Origin to some internal cause. It is probable that it is often owing to some latent Venereal Cause entailed by Parents on their Children, but so modified as no longer to produce Venereal Sores but to give Rise to the Scrophula & the Carcinomata Scrophulosa. We shall first here premise a few Words on the Scrophula.

We are told that some of the Inhabitants of the Alps that lie between Italy & France & particularly the Tyrolese are afflicted with Swellings of the Neck & Throat which have been called Scrophulous; but from the imperfect Description of them we cannot judge whether they properly come under this Denomination. Those Swellings & Indurations of the Glands of the Neck & behind the Ears that occur in Children oftener occasion or accompany Breaking out in the Head have often produced by Colds are of little Consequence & do not deserve a particular Attention - they either suppurate or go away of themselves, if they do not a Purge or two will carry them off; when they are tedious they may be destroyed by a Mercurial Plaister; they may be generally be prevented by keeping the Head clean & not suffering the Hair to grow too long or thick. If these must have the Denomination of Scrophula it must certainly have that of Scrophula Benegna. Neither do we mean those Hardnesses & Indurations of the Glands of the Groins of Boys about the age of Puberty, when the Semen begins to be secreted, when the Lymphatic Glands in the Groin swell

swell, grow hard, sore & soon disappear. They are called by the Vulgar growing Pains. Neither do we mean those Induration of the Glands under the Chin produced by the Tooth Ach or Colds which ever if obstinate yeild to the Peruvian Barks. nor those Indurations of the Glands which accompany Consumptions & Hectic Fevers where the Emaciation renders these more visible, unless the single Instance of Phthisis Scrophulosa. In the Elephantiasis the Glands are hard & very perceptible but it is still doubtful whether this is not occasioned by Scrophula. It appears sometimes to be owing to the Venereal Virus: Of this I had an Instance of a Man who was afflicted with Indurations all over the Body very much resembling the Elephantiasis & which were in Consequence of the Venereal Disease. But by Scrophula we mean large & small Tumors in the Glands of the Groin, Armpits, under the Chin, in the Neck & Throat with Sores. These Tumors are of different Colors as red, white copper colored & a reddish blue. They are sometimes scabby like Ring Worms. They are produced by Cohabitation with impure Persons or from Parents & Nurses. They are not unfrequently the Consequence of Venereal Infection. Thus in a Gonorrhea there is often a Swelling & Induration of a Gland in the Groin which remains after the Gonorrhea has been cured & after every Symptom of the Venereal Disease has gone off. It resists the Power of Mercury & after repeated Salivations & Baths the Exhibition of the Corros: Subl: both internally & externally, it will at length require Extirpation with Knife or Caustic. An Appearance like a small Tendon or Pack Thread is frequently observed under the Skin. This is certainly an indurated Lymphatic whose Contents have grown hard. —

If then a Scrophulous Tumor of short Continuance & which has evidently been brought on by a Venereal Infection is so difficult to cure, how much less Reason have we to expect a Cure when the Disease has been handed down from Father to Son & the Virus has become concentrated. This is the Reason that Scrophulous Cancers of the Breast are cured with the utmost Difficulty & it is even sometimes impossible to cure them at tho' situated near the Illeus or Sternum. If extirpated they will break out again thence it is so difficult to eradicate them. They may frequently be eradicated in the Beginning by Mercurial Preparations; but if they have arrived to any Bigness & acquired Acrimony & Malignity no Medicines will be effectual to remove them. They always in the End attack the Sternum & not seldom perforate the Cavity of the Thorax when generally speaking they are incurable & every Medicine will come too late. It is very difficult to know this from the former Species & it is of the utmost Consequence to distinguish them properly as they require very different & even opposite Methods of Treatment. The Scrophulous Cancer by its Extirpation requires a long & prudent Course of Mercury both internally & externally. In the former Species this Method will not succeed & Mercury aggravates them. It is of Consequence to know one Species from the other in Order to form our Prognosis. A genuine Cancer is a local Complaint & we may ensure our Patient of Recovery if the Cancer has been perfectly extirpated & the glands, neighboring not affected. In the Scrophulous the Case is widely different & Extirpation here is no Security against a Relapse. The Scrophulous Cancer begins like the others with a single Schirrus and I know no Difference in the Beginning but that the Scrophulous is attended with small indurated glandular Tumors

under the Arms & in Different Parts of the Body & always occurs in Persons of a bad & unhealthy State. There are often also two or three Schirri at the same Time & in the same Breast. To the touch they are not so hard & firm as the Genuine as they have little or no Pain till they become open Sores nor always then is it much. After they are advanced or broke they are altogether different in Color & Appearance. The Breast appears covered with bluish red Spots & is flat & hard & firm as a Board, the Integuments & Substance of the Breast being drawn in and strated with a Furrow in the Middle & firmly fixed to the Muscles & Ribs. Hence this Species of Cancer might with Propriety be termed Cancer Retractus. Hence the Breast sometimes appears as if a Peice was taken out. The Glandulæ Subcutaneæ or Hardened Lymphatics appear like small hard Lumps of the Size of Peas which thread themselves up & down along the Breast, hence the whole resemble a small Crab & it is probably from this Species that the rest have acquired their Name. Those Lumps spread themselves up & down the Breast but chiefly to the Side towards the Axilla above the Serratus Anticus Major. When these Sores dry up they leave white Scars. The Ribs appear as if tied fast & the Cavity of the Thorax appears contracted, hence Respiration is impeded. This Species is seldom owing to Passions of the Mind & the Patients can assign no Cause nor inform us whence or how they took their Origin. They often imagine they are produced by Blows, Contusions or Pressure. The other Species are generally owing to Passions of the Mind & attack the most healthy Persons, while this commonly occurs in Persons of sickly Constitutions

with a bad State of the Humors. The Face is generally of a yellow or leaden Hue with a Redness & Soreness of the Eyes, diseased Eyelids, chapped Lips, a puffed or emaciated Countenance an Appearance like Ringworms in the hairy Scalp; there are also indurated Glands in the Throat Armpits or Groins. Tetters in the Skin &c. the Skin appears hard & dry. When the Disease is at the Height the Color of the Breast is like that of an Erysipelas or of a Copper Color; there is also a Heat & Vapor arises from the Part which is peculiar to this Species. the Inflamation is always greater after an unsuccessful Extirpation than before. If the Disease begins in the Armpits it advances lower into the Breast & as it is moveable leaves a Straitness in the Part it formerly occupied it frequently affects different Parts of the Body at the same Time. The Sores have a very different Appearance; some discharge a thick well matterated Pus. others discharge a thin, fetid, black Ichor; some heal up while others remain open with white Edges resembling fat Bacon in others the Edges are red and fungous; some are constantly covered with a dry Scurf or Scab which increases both in Height & Circumference unless softened by emollient Applications & made to fall off. This is the most malignant Kind. it sometimes extends from the Head to the Groin covering the whole Body & denotes a total Depravation of the Humors. These Schirri when small are often discussed with Mercurial Ointment & by warm emollient Cataplasms. Mr. Guy discussed many by this Method & the Application of warm Cow's Dung over the Tumor. There are Instances of these being

being removed by a long continued & strong Course of Mercury as for the Venereal Disease - of this the following Case is an Instance - A Lady was first afflicted with a Cancer when she was near her 40th Year. Had it twice extirpated from one Breast after Extirpation & healing of the Ulcer, it broke out again in the other Breast also was found affected - it was increased to double its natural Size & was very hard & at the same time there were indurated Glands about the Neck & Throat. Two Drachms of a strong Mercurial Ointment were spread upon Leather & applied over the whole Breast - this was repeated every other Day - she at the same Time took Mercurials in large Quantities. By these Means several small Schirri were dissipated & a Tightness was perceived over the whole Breast, after a few Weeks an Erysipelatous Redness appeared which extended over the whole Breast & rendered the further Application of the Ointment improper. This went off in a few Days & the Breast was reduced to its natural Size but the Schirrous Hardness in some Measure remained for this Concern she returned to her former Course. A strong Solution of Sublimate or Lint was applied to the Sores which kept them clean & in some Time destroyed the Cancerous Quality altogether. It is in this particular Species & in this only that Hemlock is attended with Advantage & it is owing to the improper Ideas which Physicians have concerning Cancers that they have entertained such very different Opinions on the Use of this Remedy. Amongst these we must rank Dr. Storck himself. The following Case shows the good Effects of Hemlock. A Gentleman had a Cancerous Sore in his Face which extended over his Cheek & Neck - This discharged a thin acrid, & also Ichor which gave to the Lint a Color & Smell which is peculiar to Cancers - In -

In the Month of Decamber 1762 when no Hemlock could be procured he was ordered to take the Peruvian Bark & Wine & Opium to ease his Pain and to apply Tinct: Myrrh to check the Discharge. He continued this Course for some Time - at the Expiration of six Days it was found that the Disorder increased rather than diminished. Some Hemlock was now procured but was too young; from this however an Extract was made of which he was ordered to take 6 gr. Morning & Evening. He continued this Course some Time but received no Benefit from it. In the Middle of January some more Hemlock was procured which was older of the Extract of this he took 6 gr. v. three Times a Day - the Bark & other Remedies were continued at the same Time. From this Time all his Symptoms became easier, he felt no Pain, the Ulcers did not extend further and he slept well without his usual Dose of Opium. The ulcer put on a more favorable Appearance with soft Edges and discharged from the whole of it, instead of a thin acrid Ichor, a well maturated Pus. By the Middle of the Month the Ulcer looked as if it was going to heal & he was so much better that he could walk about. All his Friends flattered themselves now with the Hopes of his speedy Recovery, tho' but a few Weeks before they expected to lose him, but unfortunately now the Extract of Hemlock was exhausted & no more was to be had. From this Time the Ulcer continued to grow worse tho' the Bark & other Remedies were continued. All his Symptoms were aggravated until his Death which happened in 3 Weeks from the Time he left off the Hemlock. This Case establishes more, than if the Cure had been perfect, that the Relief was owing to the Use of this Remedy, for as the Bark & other Remedies which he had used at the same Time

with the Hemlock were continued after he left the City of this & his Symptoms notwithstanding were immediately rendered worse it appears evidently that all the Benefit was owing to the Hemlock & that he died in all human Probability from the want of it. It appears also that the Cancer was of that kind which we have entitled the Scrophulous Kin which the Hemlock can be used with Safety & Success. In the two former Species it is ineffectual & hurtful —

Cancers in the Breast are always owing to a Schirrus, which in the Beginning is small & may be easily moved from one Part to another, but afterwards by the Degrees we have enumerated arrives at its Height. All Sores & Ulcers in the Breast whether they extend more or less in Breadth & Depth with Hardness or Redness of the Edges or whatever disagreeable Symptoms they may put on unless they are originally owing to Schirrus never deserve the Name of Cancer. It may happen that soft Swellings & Congestions beginning in the Skin or like Tumors from the Fat in the Cellular Membrane or more deeply seated as Boils, Fistulas, Encysted Tumors & Rheumatic Affections of the Muscles, & Congestions of Serum or Tumors or Sores from the Venereal Infection, I say it may happen that these Swellings will spread & attack the neighboring Parts. Notwithstanding these appear dangerous & dreadful they are not nor will they ever assume the Nature & Quality of a Cancer — they likewise require a particular Method of Treatment. I do not believe that a real Schirrus & Cancer is ever generated from a congestion of Milk in the Breast; for Women who have no Milk in their Breasts & who have never had Children particularly barren Wives are more affected with these Complaints than other Women. This

They are generally produced by violent Passions of the Mind, as long continued silent Grief or sudden Terror in Persons of a weak & irritable Nervous System, or from external Violence or from ill made tight Stays or from improper Food or from the abuse of Spirituous Liquors or from a sedentary & inactive life. All these & others of the like Nature have brought on Schirri & Cancers. It has sometimes happened that a real & completely formed Schirrus has been discussed in Consequence of Congestions of Milk & the febris lactea in lying in Women. They are most effectually prevented by a timely & Marriage & bearing of Children & the Patient suckles herself. It may sometimes happen that Tumors from Congestions of Milk & a Schirrus may take Place at the same time. The Hardness of the former is often discussed by the Resolution of the Milk which is discharged thro the Nipple. If this does not happen of itself it may be promoted by warm emollient Cataplasms, but it more frequently happens that a Fistula is formed & in this Case the Acetum Lythargyrii applied in a Poultice is the surest & most effectual in affording Relief. But whether the former or the Tumor from the Congestion of Milk is resolved the Schirrus is converted into a Cancer. In this Case the Milk would be improperly applied of producing the Cancer.

The best Method to prevent Cancerous Affections is by a proper Education to guard against weak Nerves & an irritable Habit of Body. If they marry at a proper Time of Life they should suckle their Children themselves, they should not wear tight Stays which by

by comprising the Vessels prevent the proper Strength & Vigor of the circulation in the smaller Vessels by which they are kept free from Obstruction & congestion. This Cancerous disposition will not be corrected if there is a Tendency to Scrophula but its Appearance in the Breast may be guarded against by those Methods. As the Scrophula is often an hereditary Disease it requires active Medicines to prevent its breaking out or to remove it.

When a Cancer is not radically extirpated it returns with more Violence & puts on worse Appearances than at first. This appears to happen in the following manner. By the Extirpation the Schirrous or Cancer is irritated & the confined Humors are set in Motion & carried to the neighboring Parts by which the Disease is communicated to them also the Fluids may then also be absorbed & communicated to the adjacent Glands or to the whole Mass of Blood. When therefore a Schirrhus appears completely formed in the Breast we should not delay Extirpation until it is degenerated from a small indolent Tumor to a large and painful Swelling & an open Ulcer; for by this Time it may have communicated the Cancerous Virus not only to the whole of the Breast but also to the viscera & other internal Parts. We should be very circumspect when we eradicate a Cancer not to leave any Part of it behind lest it should afterwards increase & render the Case desperate.

There have been at all Times different Opinions with Regard to the infectious Nature of Cancers, some asserting that they are so whilst others deny it. The following Cases tend to show that open Cancerous Sores

an infectious, at Times at least, whether they are always so cannot be determined -

A Woman was affected with a severe & incurable Cancer after sleeping 20 Years in the same Bed with her Husband who had a cancerous Sore in his Face. - But the following Story if true is a very extraordinary one indeed. A Lady fainted away upon seeing a Cancer in her Friend's Breast - the Maid in Attendance to recover her from the Fit poured some Water down her Throat in which the Surgeon after dressing the Cancer had dipped his Instruments & Sponge. She was afterwards affected with Sores in her Mouth & Cancer which soon proved the Cause of her Death. The Toads that have been applied to Cancerous Sores are said to Expire soon after they have sucked them. If the Fact is so it confirms the Opinion that the Cancerous Virus may prove deleterious & that they are infectious. A Tradesman of Nottingham endeavored to relieve his Wife who labored under an incurable Cancer by drawing off the Fluids by sucking her Nipples. Dr Buket who records the Case tells us that he soon got a violent Cancerous Sore in his upper Lip & Gum of which he died -

From the different Construction of the Breasts in Men and Women & the different Effects which the Passions have on them we may in some Measure explain why Cancers so seldom occur in the Breasts of Men unless they are of the Scirrhous Kind & there are scarcely any Instances of Cancers attacking these Parts in Men. Women are seldom attacked with Cancers in the Lips & Face; these on the contrary are common to Men. These are not produced by Passions of the Mind but generally owe their

their Origin to small inconsiderable Pimples or rather external
Affections which have been converted by Irritation & improper
Treatment into Cancers especially if there is a Predis-
position in the System. There we find critical Eruptions
on the Body particularly on the Face in the Form of Scabs,
Scales, Warts &c. An Obstruction is sometimes formed in the
Extremety of an exhalent Vessel. the stagnating Matter in
these Cases by Length of Time & improper Treatment, especi-
ally if irritating Remedies are applied at the same Time,
becomes acrid & forms an obstinate & Cancerous Sore. In
Consequence of Humors which were confined being put in
Motion open & running Sores are produced, which do not
only attack the neighboring Parts but in the End extend
to all the Humors in the Body which are corrupted. This
happens only in Consequence of old, ill placed, too long neglected
or improperly treated Sores of a Cancerous Nature. Cancers
however are not always owing to an Acrimony in the
Blood. For if this were the Case how would it be possible
to cure a Cancer by Extirpation with the Knife or
Guyt's Powder.

Lecture 26th.

Physicians are apt to confound Cancers & Venereal Sores, particularly in the Breast — we shall therefor deliver the Characteristics of these & point out how they maybe distinguished from each other. It is of the utmost Importance in Practice to do this properly, for in one case we may certainly always promise Relief which in the other is always uncertain —

Venereal Sores put on various Appearances in different Parts but it is cheifly in the Breast that they resemble & are mistaken for Cancers — In the Breast there are three kinds, or there are three Stages — The 1st are the Ulcera Cutanea Purulenta — 2d. The Gangrenous The 3d are with a Hardness which begins in the Periosteum of the Ribs — The first are distinguished by their white Sloughs which resemble fat Bacon & by the Hardness that accompanies them. In the Venereal Disease the Hardness begins at or about the Nipple which becomes red & inflamed, swells & suppurates & is very tender; the Skin also appears inflamed with Pustules which afford Matter. Sometimes there are Blotches or Spots of Fistulous Ulcers of about the Size of the small end of a Tobacco Pipe which discharge an Ichor or Sanies — This first Species is attended with little or no Danger. —

The 2d Species or the Gangrenous puts on frightful Symptoms & most resembles the Disease by Physicians called Noma. It eats away & rottifies in Depth & Breadth & will quickly consume the Substance of the Breast — They are not attended

with much Pain & are distinguished by the Softness of the Tumor. The following Case will give a proper Idea of the Disease & the Method of Cure which was found effectual in removing it. A Woman about 40 Years old had a considerable Ulcer in her Breast which was supposed to be a Cancer. She had very large Breasts & in the lower Part of one of them she had an Ulcer large enough to admit the first Joint of a Man, which appeared of a blackish Brown Color Looked like one mortified Peice - Towards the Arm a considerable Part of the Tendon of the Pectoral Muscle was laid bare - the Skin was of a reddish yellow and lead Color - the Edges appeared even & smooth & the Hard[illegible] extended about half an Inch round the Edges of the Ulcer & the Glands in the Armpit appeared swelled. Observe - From the Softness of the Edges, the Manner of coming on & the Smoothness of the Ulcer it appeared that this was not a Cancer but a Venereal Sore.

It was cured in the following Manner - A strong Solution of Sublimate viz^{t} Gr^{s} iiij to ℥j of Spirit was applied upon Lint - the Ulcer was filled up with Lint moistened with D^{o} Spirit - a sticking Plaister was applied to confine the Lint - this was renewed once a Day. In a short Time the mortified black Flesh begun to separate & the Ulcer became of a bright red Color. The Ulcer discharged good Pus & the Indurations vanished - in three Weeks the Sore was replenished with Flesh & in a Month was perfectly cured without the Use of any other Remedy - Similar Cases in grown Persons & Children have been cured in the same Manner. The Sore should always be kept moist with a Solution of Corrosive Sublimate,

and this Medicine should at the same Time be given inter-
nally- this will always check a Mortification in those
Cases when the common Antiseptics will be of no use.

The 3d. Species of Venereal Ulcers or that which begins
with a Hardness in the Pericosteum of the Ribs is very
uncommon. The following Case will tend to make
you acquainted with the Nature of the Disease & the Method
of Cure.— A Man aged 40 had a small Tumor that ap-
peared to adhere to the Bone immediately- this increased
to the Size of a Hazlenut- A Shooting was perceived & after
a few Weeks it increased in Height & Breadth with much
Pain- one Half of the Breast was indurated with an Eleva-
tion of the Rib, the other Part of the Breast was raised
but was soft & moveable; the Skin was not discolored.
He acknowledged that he had had Venereal Complaints
in the early Part of his Life but had no Symptoms
of it for many Years. He was ordered to use the Solu-
tion of Sublimate both internally & externally. He
took four Tablespoonfuls of the Spirituous Solution
in a Day & at the same Time applied Compresses
moistened with an aqueous Solution to the Swelling.
In four Days the Pain was removed & the Swelling
disappeared except the original small Tumor. As it
was very disagreeable to be confined merely to
keep the Compresses moist with the Solution, Mer-
curial Ointment spread on Leather was used in
its Stead. He still continued to take the Spirituous
Solution internally; by these Means the Tumor was
very much softened & diminished. If—

It after some Time opened & discharged a thin milky Matter. it at length degenerated into a Fistula which was cured by the Preparations of Lead & the Ribs returned to their former Position. —

Much then will depend on the Judgment of the Physician in these Cases. He should try Mercurials with great circumspection. If he commits an Error & does not soon discover it he will do irreparable Mischief. In a Scrophulous Cancer if he trusts to Extirpation alone he will aggravate the Disorder unless he at the same Time gives Medicines internally to eradicate the Disease Totally from the System.

Cancers in the Tongue do not often occur, when they do they may be distinguished by their Hardness — this however can only be felt & not ~~discerned~~ discribed. The external Appearance may do something towards discovering them but after all the Touch is the best Criterion. Cancerous Sores in the Tongue are red & of one Color except the Blueness of some Parts which is owing to Varicose Veins. When far advanced they appear rough with Fissures or Incisions and round the Fissures appear many Tubercles with considerable Hardness. The Venereal Sores are soft to the Touch tho' they are sometimes rough when they have an adipose Appearance. They appear internally of a yellowish red & have a whitish verging towards green resembling the Discharge in a Gonorrhoea. The Difference of Color is owing to the different Consistence of the Sanies. — Life —

These Ulcers are sometimes of the Gangrenous Kind, when they are distinguished by their Softness & their Color of dirty Brown They prove fatal in a short Time unless treated as they ought to be. The following Case will serve to make the Disease familiar to you. A young Gentleman was supposed to have a Cancer in his Tongue which was treated accordingly with Hemlock internally & a Gargle of a Decoction of Hemlock externally, but without Advantage more than a third Part of his Tongue was destroyed as if cut away with a Knife; the Patient could not speak and even Liquids were swallowed with Difficulty: he became emaciated, his Countenance was pallid, his Cheek Bones high; he had a fœtid Breath an Hectic Fever & a continual Salivation as if from Mercury, tho' he had not taken a Grain. The Ulcer appeared of a dark brown was soft to the Touch & not very painful. Upon Inquiry it was found that he had had a Gonorrhea & Bubo which to Appearance had been radically cured: From this & the Appearance of the Ulcer and the rapid Progress it had made it was judged to be a Venereal Case & that would admit of a cure. This was effected in three Weeks with Pills of Calomel taken internally & by dressing the Sore with Lint moistened with a strong Solution of Corrosive Sublimate. It was remarkable that when the Sore was filled with Lint the Patient could speak so as to be understood, but when this was removed he could not articulate a Syllable. When the Patient took his Victuals the Sore was filled with dry Lint, when he could swallow with Ease. As soon as his Repast was finished the Lint moistened

moistened with the Corrof: Sublt: was again applied. By these Means the Sore was soon replenished with Flesh & in 3 Weeks was intirely cured leaving only a trifling Bond on one Side.

From this it is evident that it is of the utmost Consequence to distinguish properly between Cancerous and Venereal Sores; for as certainly as Mercury relieves or cures the one Disease it aggravates the other. It is remarkable how Physicians have confounded these. Dr. Aikenside is an Instance of this. In a Piece on Cancers in the Trasactions of the R. Coll: of Phys: at London he tells us that he found that Hemlock would mitigate the Pain in some Cases & that sometimes he experienced the most happy Effects from Corrof: Sublt: & occasionally found the Peruvian Barks of Service — hence he was led to try the Effects of the three combined or at least administered at the same Time & tells us they were attended with great Success How fortunate he was in discovering a Remedy to cure Cancers in the Tongue & Lips especially when recent, for when they were old he found his Remedy ineffectual. He particularly describes an Ulcer in the Tongue, an Inch in length of a white Color & another in the under Lip attended with Heat & Pain both very foul with Fisures which appeared of a brown Color & discharged a grumish Matter. Both these Cases were cured by a Combination of these three Medicines tho' the Sublimate deserves the whole Credit of the Cure for this was given in 1/4 of a Grain a Dose twice a Day.

'Tis evident that these were of the Venereal Kind. for had they been real Cancers they would have been aggravated by the Mercury. It is astonishing how Dr. Storck falls into the same Error even in his late Publication on the Cure of Cancers by the Flamula Jovis. Hemitales Cases which from his own Account appear to be Sores with Ulcers on the Lips &c. which he calls Cancers & cures speedily with the Powder of the Flamula Jovis.

Cancers of the Lips & Face may be distinguished by their coming on gradually, from Venereal Ulcers. In the Beginning they occupy a small Space & appear like small Warts or uneven Scales sometimes with a perceptible Hardness in the very Substance of them — in their inner Part they appear dry & red — if not red they are of one Color & never have Yellow or white Sloughs. The Nervous Papillæ appear elevated like hard straight Bristles — This is a Pathonomonic Symptom & never takes Place in Venereal Ulcers. It always occurs in Cancers of the Lips tho' more or less evident as the Papillæ are distinct & separate. In some they are as distinct & separate as Bristles in others they appear only as dry white elevated Parts. If they tend much inwards they have hard reflected Edges — if they are only superficial they are without proper Edges & appear like chapped Warts with erect Bristles they discharge a thin Sanies. Some appear horny like the Spud of a boot with a little Soreness & Inflamation at the Bases —

Tis —

'Tis seldom that Persons apply for Relief until they are incurable because at first they do not appear to be of much Consequence —

The Venereal Ulcers puff up with soft spongy elastic Edges & increase as much in a few Weeks as Cancers do in as many Years & they have a foul disagreeable Appearance which greatly alarms the Patient. Cancers of the Lips & Face are generally produced from small dry Sores of a watery Appearance which have been considered of no Consequence & not much regarded. All Sores which discharge a thin Humor & are covered with a thin Pellicle & which do not heal soon are to be considered as of a Suspicious Nature. In general these small Tumors are not much regarded & are never suspected until they degenerate into real incurable Cancers. Of this the following will afford a melancholy Instance. A young Gentleman had many dry warty Appearances with grey scabby Blotches in his Face to which he was advised to apply Ol. Tart: per Delig: This produced Cancerous Sores. For this Salivation, Cutting and the Butyr: Ant: were employed, by which the Sore degenerated into a Cancer which occupied the whole Cheek. It is probable that these Eruptions contained the Cancerous Virus which required only external irritating applications to set in Action & which probably never would have been attended with any bad Consequences or would in Time have vanished entirely had it not been for these Applications.

Another —

Another Gentleman of an healthy sound Habit of Body pinched off with his Nails the Head of an immature Pimple, a small Drop of Serum appeared in the Spot & was renewed as often as it was wiped off. The Base appeared hard & indurated & it increased in Size. The Lapis Infern: Verdigris & other Caustics were applied but only aggravated it. Salivation was then employed but only increased the Disorder. He lost his Nose, Half the Eyelids of both Eyes, both Cheeks & the upper Part of the Lip before a Period was put to his miserable Existence. If notwithstanding all I have said your should still be at a loss to distinguish Cancers from Venereal Sores the following Method is always infallible. Cover a Part or if small the whole of the Ulcer with Levigated Calomel, confine this with a sticking Plaister & let it remain 24 Hours. If the Sloughs & the Sores put on a more favorable Appearance this confirms it to be of a Venereal Nature - if aggravated it is a Cancer. I have thus endeavored to give you a proper Knowledge of Cancers in order to ascertain the Virtues of the Hemlock. These I told you are of three Kinds, the Cancer Genuinus Fungosus & Scrophulosus. All these originate from Schirri & differ from each other in Nature & Cure. The two former are entirely local while they admit of a Cure which can be performed only by Extirpation for which Guy's Powder is an effectual Remedy. Mercurials, Calybeates & Hemlocks are injurious. The Scrophulous Cancer is connected with a Disorder of the

the System & Constitution cannot be cured by topical Applications unless internal Medicines are employed at the same Time. In this Mercury & halybeates & Bitters are proper Medicines & will seldom fail of affording Relief if they are administered sufficiently early in the Disease. It is frequently an Hereditary Disease & sometimes the Consequence of Venereal Infection & affects different Parts at the same Time in consequence of which both Solids & Fluids are affected -

I am now to make a few Observations on the various topical Applications for the Cure of Cancers, which have been made Use of by different Persons. But previous to this I must mention the internal Use of Arsnic in the Cure of Cancers. Dr. Le Febure who has published a Treatise on Cancers recommends Arsnic as an effectual & safe Remedy given in the Manner he directs. Four Grains of clear, white & shining Arsnic in Chrystals is to be dissolved in a Pint of distilled Water, of this a Tablespoonful is to be taken once a Day for the first 8 Days with an equal Quantity of Milk & Half an Ounce of the Syrup of Poppies - it is then to be given for the next 8 Days twice a Day, after this it is to be given three times a Day. If the Persons are strong and robust we may increase it to two Spoonsful at a Dose. After the first Pint is taken the Quantity dissolved may be increased to six Grains & finally to eight Grains, but must never go beyond this last Quantity. He tells us it is safe & certain in its Effects. Justamond employed Arsnic in a Variety of Shapes with a View to

to ascertain its Effects & to determine the proper Mode of applying Plunkets Remedy. Upon Mr. Guy's Remedy acquiring a great Reputation for the Cure of these Disorders it was suspected to be the same or very nearly similar to Plunkets Powder of which Arsenic is the Basis. Vide the London Medical Essays. By Justamonds Account it appears that Plunkets Remedy has very nearly the same Effects as Guy's Powder. From a Variety of Experiments the Effects of which were always similar, he was convinced that it was not always a safe Remedy, he therefore on the least Grounds abstained from continuing to employ it, tho' with regret, until he could find some Means of securing its Salutary without its deleterious Effects. Justamond particularly accuses it of producing various Spasmodic Affections of the Muscles particularly those of the Eye. Tis remarkable that the Medicine employed some Time ago in this Place for the Cure of Cancers was observed to have the same Effects. There are two Facts which tend to show the Truth of this Observation of Justamond. When I was in the West-Indies I was informed that a Person in the Island of Anguilla possessed an infallible Remedy for the Cure of Cancers & that one Gentleman in particular had been effectually cured without any other Inconvenience than that it had left a Paralytic Affection of one Eye. It was not till I became acquainted with Justamonds that I was able to assign a Cause for this Phaenomenon. The other Fact was communicated to me by a Physician of this City & there can be no Doubt

of its Youth. Dr Redman was called to a young Woman who labored under severe Spasmodic Affections, these yeilded to the usual Remedies & went off in a few Days; some Time after he was again called upon when he found her affected in the same Manner. he particularly observed that her Eye was affected with Spasms and Symptoms of a Palsy. As the Dr had just then been made acquainted with Justamond's Experiments, he made particular Inquiry into the State of a Lancer which he before knew she labored under. he was told that an Application had been made the Evening before by Mr. Martin of his Remedy then famous for the Cure of Lancers. He was some Time after again applied to & found that the same Remedy had been again applied and was attended with the same Consequences & this happened repeatedly. The Doctor was no further at a loss to account for her Complaints. The young Woman was afterwards removed to Wilmington and when I last heard from her she was in a truly pitiable Condition. The Lancer remained incurable with excruciating Pain that threw her into Convulsions with the loss of her Reason.

Guy's Medicine was not effectual in all Cases of Lancer. Mr. Guy was himself sensible of this. He appears to have been a regular bred Surgeon & a Man of Knowledge in his Profession &

and in many Cases declined to apply it when from the Nature of Things it appeared that it could not be of Service. Dr Berken whom I knew well & with whom I was upon Terms of the most intimate Friendship never considered it as infallible & in many Cases declined to recommend it. When the Knife can be employed it is a more speedy effectual & less painful Method than Guy's or any other Caustic. Cases may occur where from the Situation of the Parts the Knife cannot be used at least not without great Inconvenience - here we may have Recourse to particular Applications of which Arsnic is the Basis. From de Febure's Observations & Justamond's Experiments it is evident that Arsnic will prove effectual & does not always produce deliterious Effects. The Arsnic may in some Cases have good Effects yet I cannot recommend its use to you, which must be left to the Decision of every Person's own Judgment. We should never meddle with a Cancer or give Hopes of Relief when from the Nature of Things a Cure is impossible. An incurable Cancer may be palliated by a strict Antiphlogistic Regimen & Opium. Justamond recommends washing it with a Solution of the Sol: Mart: for this Purpose. Every unsuccessful Attempt to exterpate a Cancer aggravates & renders it worse & lays the Foundation for Disorders of the System. Experiment has at length justified my Opinion on the Composition of Martin's Powder. Dr Rush by various Experiments has reduced this Matter to

beyond all Possibility of Doubt that determined that Arsnic
is the active Ingredient. All the Remedies that have
been recommended as Specific in this Disorder are of a
similar Nature. The mildest way of Applying the Arsnic
is in Solution. It should be used with Caution, Circum-
spection & Perseverance. Where the Cancer is curable it
is often attended with Success. It is also used with Advan-
tage in other ill conditioned Ulcers where the usual
Caustics do not produce favorable Effects. We should
not apply it to a large Surface at once. If we employ
the Powder it should be used only in small Quantities &
then it is attended with little or no Pain. In applying
it we should mix it with the Mucilage of Gum Arabic
which I am informed was the Method always em-
ployed by M. Guy.

Lecture 27th.

Belladonna or Solanum Lethale is a Plant of a very virulent Nature. The whole of it is virulent, tho' the Berries & Roots are more so than the Leaves even these when infused in Water are of a Narcotic Nature & will induce Sleep. It is often hurtful to the Eyes & will sometimes bring on temporary Blindness. Notwithstanding this it has been used by some Modern Physicians for the cure of Cancerous Complaints in the Breast. Junker gives the Cases of two Women who were cured of Cancers by a strong Decoction of the Leaves. He gave one Spoonful the first Day. two the Second, three the third & increased it until he brought on a Drowsiness, then gradually diminished the Dose. The celebrated Surgeon Heister gives us the Case of a Woman who was deprived of her Reason by the Use of the Solanum Lethale tho' it did not cure the Cancer for which it was employed. Lamberg relates us of a Cancer of the Breast that was cured by this Remedy which was taken for 17 Months. The Antients, as Galen Agineta & others employed it in Cancers externally. Haller informs us that he could never observe any good Effects from it externally applied. The following Cases you will meet with in D^r Cullen's Materia Medica Page 354 which see. It is evident that these Cancers mentioned by D^r Cullen were of the Scrophulous kind & it would be safe to repeat the Experiment with the Solanum Lethale. It would no Doubt be hurtful in the two other

other Species, upon the same Principles as the Hemlocks and some other Substances.

From the Account we have given of Cancer it appears that Physicians are very vague in their Treatment of them owing to their indeterminate Ideas of this Disorders. A Variety of Medicines have been recommended at different Times for the Cure of this Complaints. We have established that internal Remedies are only useful in that particular Species which we term Scrophulous that they ought always to accompany external Applications in this Species. That the Cancer Germinus & Fungous are local & to be cured by topical Applications. When the Cancer is situated where the Knife can be employed this is the most effectual, least painful & shortest Method of Cure. Where the Knife can not be employed we have recourse to Causticks of a particular Kind which eradicate it without irritating as Mercurials and Antimonials are known to do. Of these Guy's Powder of London is found to be the most effectual. A Gentleman of this City went to London on Account of a Cancer. he there put himself under the Care of two Physicians & two Surgeons who tried a Variety of Remedies to relieve him but to no Purpose. he then applyed to Mr. Guy who cured him in a short Time. Various Attempts have been made to discover the Composition of Mr. Guy's Powder & from every Consideration there is the greatest Reason to believe, that Arsnic is the Basis & that it was long hoarded

ley a Family in Ireland of the Name of Plunket.

Hyoscyamus or Henbane possesses very considerable Narcotic Virtues. Even Dioscorides long ago observed that the Use of it confused the Head & Understanding & produced Drunkenness as if from the Use of Spirituous Liquors. Boerhaave tells us that as he & his Companion were making the Emplast: Hyosc: they were both seized with a trembling and Giddiness from the Exhalation of this Plant. Haller gives the Case of a Fellow Student under Boerhaave at Leyden who made it a Practice to taste the various Plants which grew in the Medicinal Garden of that Institution even some of the most poisonous, but upon tasting the Henbane he was deprived of his Reason & affected with a Paralysis of one Leg from both which he was recovered by Boerhaave. The Leaves bruised or boiled in Milk are used externally in Pains & Swellings; likewise in Spasmodic Pains & Irritation without Swelling when applied to the Part affected. It has been recommended for various internal Disorders & has been employed in Catarrhs and Hæmorrhages where it answers the same Purposes & acts upon the same Principles as Opium. It has also been recommended in the Dysentery. I tried it in several Instances in the Dysentery in the Place of Opium & found it generally attended with very good Effects. It took off the Pain in the Abdomen & sometimes without checking the Discharge by Stool so much as Opium. In one or two Instances I found it remarkably Diuretic. The

The best Way of giving it is in Extract from Gr. j. to Gr. ij for a Dose. Dr. Storck recommends it in a Variety of Cases but as I have had no Opportunity of experiencing its Effects in these Cases I must refer you to his own Treatise. ——

Nicotiana or Tobacco - For this Plant we are indebted to the Southern Provinces of North America. It possesses a singularly acrid & volatile with some what of a nauseous Odor & Taste. It is a Stimulant & Narcotic & acts as an Emetic & Purgative - For the Remainder, Vide Dr. Cullen's Materia Medica ——

Lauro - Cerasus or Laurel - Vide Dr. Cullen's M. M.

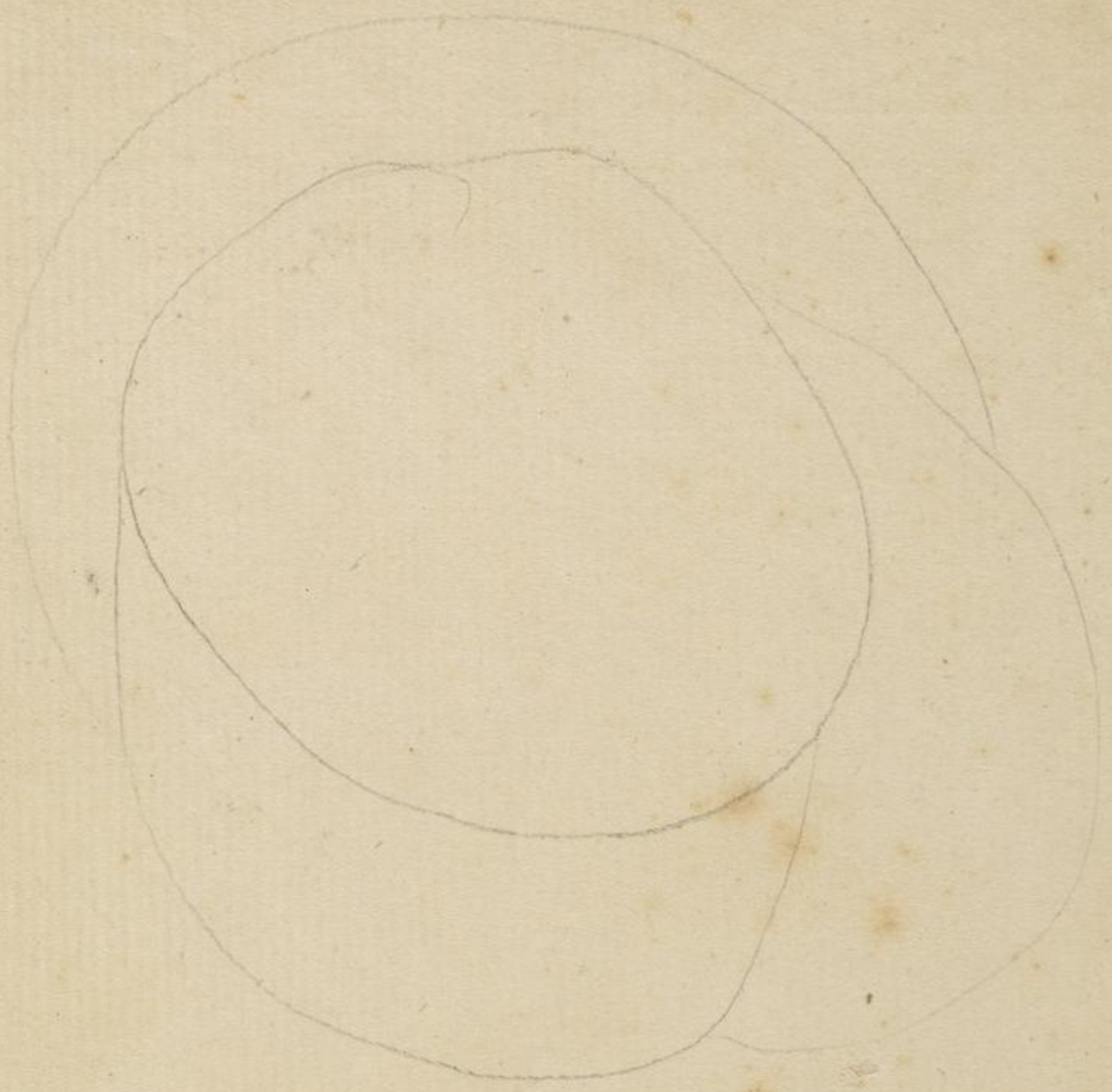
Saffron. The real Medical Virtues of this Substance are not properly ascertained. Whilst some suppose it of superior Virtues others consider it of little Consequence in the Materia Medica & both these Opinions are in some Measure just - If given from one Grain to five which is the Dose generally prescribed it is trifling & insignificant, but if given from Dr. to ℥ß. it may no Doubt have some Effect on our System, but even this scarcely equal to what the Favorers of this Medicine suppose. Boerhaave supposed it useful to strengthen the Nerves & excite the Animal Spirits. Galen, Borelli & Vansweiten tell us that when given in large Quantities it immediately renders the Person heavy & Drowsy & will even bring on Apoplexy —

Given in moderate Quantities it raises the Spirits & will even occasion immoderate Fits of Laughter. The only Use I know for it is to be applied externally to the Stomach of Infants to relieve excessive Vomiting.

Tea & Coffee are ranked under one Head tho' of very different Natures however correspondent in some of their Effects. Tea is undoubtedly a Sedative & Narcotic, tho' it possesses this Property in a higher Degree when fresh; but even after it comes to us it sometimes affects Persons of very irritable Nerves & weak Stomachs very considerably. I know some Persons who from taking a Dish of Green Tea moderately strong had immediately Spasms excited in the Stomach & other Parts of the Body. By many its bad Effects have been attributed to the relaxing Quality of the warm Water & recommend Tea to be taken strong to obviate these Effects, but they are egregiously mistaken. I know Persons who take weak Tea with Impunity, who are immediately affected with Spasms Tremors & various Nervous Complaints when they use strong Tea. Green & Bohea Teas are said to be the Produce of the same Tree - the former consists of the Leaves which first put out in the Spring which are more tender & delicate - the latter is of the second Growth and collected in Summer & is of an inferior Quality & Flavor.

Whatever are the original Qualities of Coffee they are much altered by our Manner of preparing and using it - Its Virtues are thus owing to its -

Empyreumatic Oil all which are ever known to possess-
modic & Sedative. It is certainly possessed of some Virtues
and has been found useful in Spasmodic Affections of
the Bowells. Dr Pringle found it useful in Spasmodic
Asthma. When it is used as a Medicine it ought to be
taken very strong & Drank without Sugar or Cream.
I have always found it hurtful in the Dyspepsia
where it is always attended with Indigestions, Fla-
tulencies & other disagreable Effects.

The great Variety of Nervous Disorders to which we
are now so much more subject than our Forefathers
were we may with Justice attribute to the free
use of Tea & Coffee. It is scarcely an hundred Years
since these entered into general use & in this Time
a great Revolution has happened in the Diseases
to which the Human Constitution is incident. Before
the Introduction of Tea & Coffee, Meat was used in
much greater Quantity than now. In Queen
Elizabeth's Time we know that the Court Ladies had
an Allowance of Meat & Beer for their Breakfast.
Putrid & Inflamatory Fevers were then more pre-
valent & Nervous Diseases or the Nervous Fever were
then very uncommon which now constitute the
greater Part of our Diseases. There is no Doubt but
we are benefited by the Change. They have also
contributed to the Refinement of Manners which

which has so generally taken Place within the last Century.
The free Intercourse which they have occasioned between
the Sexes has contributed to polish the one & to improve
the other. This has also contributed to abolish that
Ferocity of Manners which was before so observable.